

A.I.A. File No. 31f23

748.

Holophane Datalog

1928
COMMERCIAL
EDITION



A.I.A. File No. 31f23

Calvin
Hobbes

HOLOPHANE DATALOG

COMMERCIAL EDITION

BOOKLET No. 375-F

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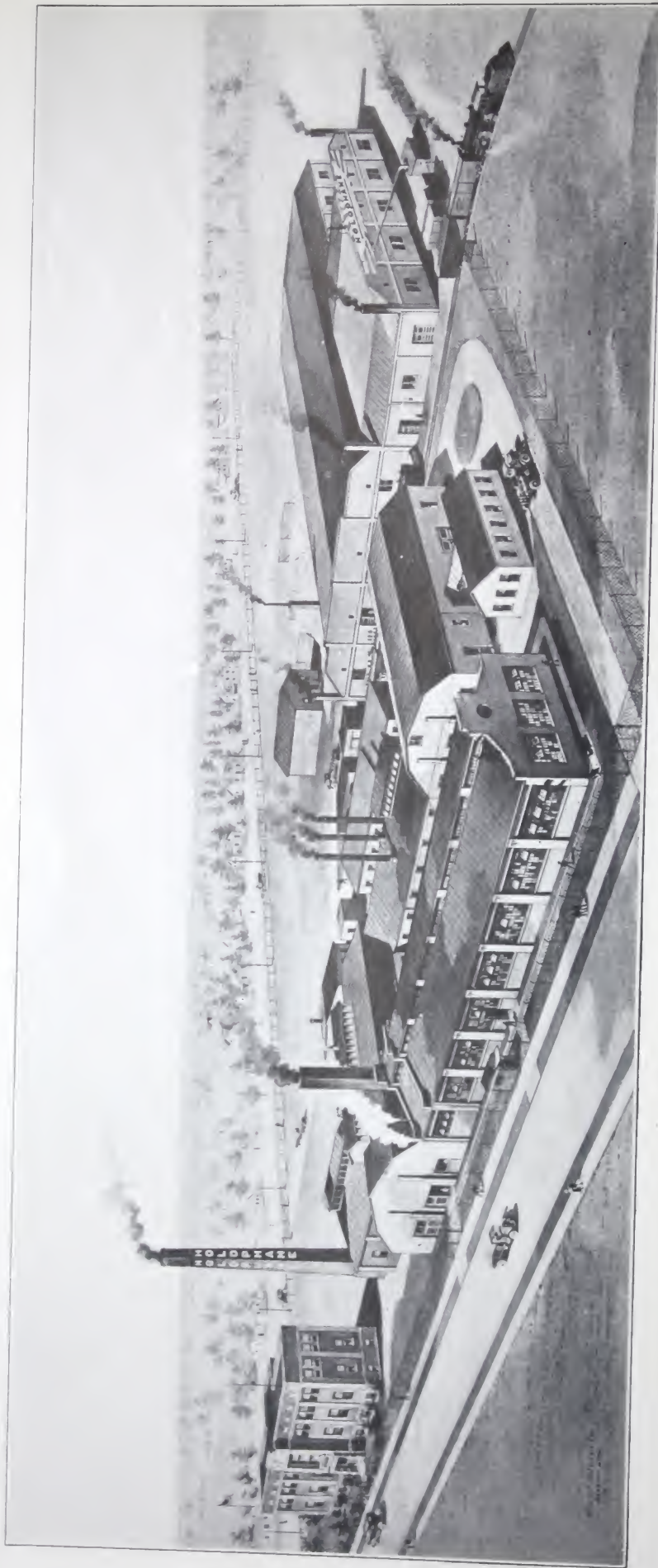
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The Holophane Co., Inc., Works at Newark, Ohio



The Holophane Datalog

IN THE preparation of this Eighth Edition of the Datalog, the Holophane Company has combined engineering with commercial information. We have avoided technicalities where possible and have discussed lighting principles on broad lines, to apply to all kinds of artificial lighting.

The Engineering policy of the Holophane Company, which has now been carried out over a period of more than thirty-five years, is sound. Our engineering services are rendered without charge or obligation. Holophane engineering recommendations will bring to you the most modern and practical suggestions in the lighting field.

Holophane believes in and practices SPECIFIC LIGHTING, that is,

1. Designing the lighting equipment for specific application.
2. Planning the individual installation (spacing, mounting height, etc.) for specific application.

A HOLOPHANE LIGHTING SPECIFIC is a device for distributing the light of the lamp exactly as required under a definite set of conditions, both the equipment and the installation of that equipment being designed in this scientific manner to render a specific service, and assuring to the user the greatest possible utilization of the system and the lowest cost for the service rendered over the life of the installation.

PLANNED LIGHTING is the name we have given to artificial lighting installations which have been planned by Holophane lighting engineers for specific application and which employ Holophane lighting specifics.

This method insures to the user more useful illumination per dollar of expenditure for equipment and energy than can be obtained in any other manner.

THE data presented in this publication have been compiled by the Holophane Engineering Department from investigations, study and practice in the *illumination field*.

On request, the authority for any statement or illumination value as shown, will be furnished by the Holophane Engineering Department. For this reason, the accuracy of these data may be absolutely relied upon for all practical illumination design work as applied to Holophane reflectors.

Holophane Engineering Service:

The Holophane Company believes that the maximum service from any lighting installation requires careful engineering design and planning in advance of the installation of equipment. To this end, the Company maintains a competent Engineering Department which will draw up complete illumination specifications on any lighting project without charge or obligation. The public is urged to take advantage of this engineering service to insure the selection and application of proper lighting equipment.

Specifics:

After a most exhaustive study of lighting requirements in all its phases, the Holophane Company has designed certain types of lighting equipment which are specifics for special classes of application.

By designing lighting equipment to fit a predetermined set of conditions, it is possible to realize maximum utilization efficiency. This method of treating lighting problems is to be contrasted with the popular misconception that a so-called standard unit can be made that will fit all lighting conditions.

All Holophane light directors have the following characteristics:

- (1) The greatest possible utilization efficiency.
- (2) A light distribution especially adapted to each application.
- (3) Sufficient light transmitted to the ceiling to give natural daylight appearance.
- (4) No permanent depreciation of reflecting surface.
- (5) Lowest temporary depreciation (due to dust and dirt) of any lighting reflector.

The Holophane Engineering Department will gladly furnish complete engineering specifications for any lighting installation, believing that this is the only way in which maximum economy and satisfaction can be obtained. This service is freely given with full faith in the philosophy—

“He Profits Most Who Serves Best”

Intensity of Illumination:

Daylight intensities outdoors are vastly higher than those employed in artificial lighting indoors. For example: Daylight foot candle intensities of 2000 are common outdoor values, whereas 20 foot candles artificial lighting indoors is exceptionally high.

High intensity illumination quickens and facilitates vision, assists in discrimination of fine detail and objects of low contrast either in brightness or color. High intensity is of advantage in all operations which are dependent upon vision.

High intensity illumination is required to reveal detail of dark objects, more so than of light ones. Higher intensity of illumination is required for fine discrimination than for coarse discrimination. Higher intensity illumination facilitates color discrimination. Color discrimination disappears at very low intensities.

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Throughout and even above the range of ordinary artificial lighting levels (2 to 10 foot candles) increased intensity induces increased visual acuity. Intensities suitable for satisfactory and efficient vision generally are higher than those minima with which objects can be readily distinguished and which are prescribed for safety in the state codes.

Extremely high intensities, beyond those to which the eye can adapt itself, such as are encountered in arc-welding, over-stimulate the eye's retina and exert an injurious effect.

Table I shows the desirable illumination that should be provided for various locations and represents modern lighting practice but each installation should be made a special study. The Holophane Engineering Department will be glad to advise on special problems.

TABLE I

Work	Foot Candles Intensity	Work	Foot Candles Intensity	Work	Foot Candles Intensity
Aisles.....	3	Hotel:		Class, Study, Recitation	
Armory.....	10	Bedroom.....	8	Rooms, Libraries, Labora-	
Assembling:		Corridor.....	3	tories, Manual Training,	
Rough.....	8	Dining Room (General).....	6	Domestic Science (except	
Medium.....	12	Dining Room (with Table		sewing).....	12
Fine.....	20	Lights).....	3	Sewing, Drawing, Drafting.....	25
Extra Fine.....	50-100	Lobby.....	8	Stairways.....	5
Auditorium.....	6			Station:	
Automobile Show Room.....	15	Industrial Yard Thoroughfares..	1/2	Waiting Room.....	8
Bakeries:		Inspecting:		Storage and Stock Rooms:	
Mixing and Baking.....	12	Rough Inspecting.....	10	Rough Stock.....	4
Bank (General).....	10	Medium Inspecting.....	15	Medium Stock.....	6
Bank (Desk).....	15	Fine Inspecting.....	25	Fine Stock.....	9
Barber Shop.....	15	Extra Fine Inspecting.....	50-100	Stores:	
Billiard Room (General).....	6	Jewelry and Watch Mfg.:		Apparel.....	12
Billiard Table.....	25	Bench Work.....	50-100	Art.....	12
Boiler, Engine Rooms, etc.:				Baker.....	12
Boiler Rooms, Coal and Ash		Laundries, Dry Cleaning:		Book.....	12
Handling.....	6	Washing.....	12	Butcher.....	12
Switch Boards, Engines.....	9	Sorting, etc.....	15	Carpet.....	15
Café (General only).....	8	Library:		Cigar.....	15
Café with Table Lights.....	3	Stack Room.....	6	Clothing.....	15
Card Room (Tables).....	8	Reading Room.....	12	Confectionery.....	12
Church.....	3	Reading Room (with Local)....	4	Decorator.....	12
Construction:		Machine Shops:		Drugs.....	15
Outdoor.....	1	Rough Bench and Machine		Dry Goods.....	15
Indoor.....	3	Work.....	10	Florist.....	12
Desk.....	15	Medium Bench and Machine		Furniture.....	4
Drafting.....	25	Work, etc.....	15	Furrier.....	15
Elevators, Freight and Passengers	6	Fine Bench and Machine		Grocery.....	12
Engraving.....	50-100	Work, etc.....	20	Haberdashery.....	15
Forge Shops and Welding:		Extra Fine Bench and Ma-		Hardware.....	12
Rough Forging.....	6	chine Work, etc.....	50-100	Hat.....	15
Fine Forging.....	10	Offices.....	10-15	Hosiery and Knit Goods.....	15
Foundries:		Printing Industries:		Jewelry.....	15
Charging Floor.....	8	Matrixing, Casting, etc.....	12	Leather.....	12
Rough Molding.....	10	Proof-reading, etc.....	15	Millinery.....	15
Fine Molding.....	15	Linotype, Monotype, etc.....	50-100	Music.....	12
Garage.....	8	Receiving and Shipping.....	6	Notions, Dark.....	12
Gymnasium.....	12	Schools:		Piano.....	12
Halls, Passageways in Interiors..	3	Storage spaces.....	2	Rug Rack.....	20
Hockey Arena.....	25	Stairways, Corridors, En-		Shoes.....	15
Hospital:		trances, Porticos, etc.....	5	Show Window.....	50-2500
Ward Room, Dim.....	0.1	Boiler Rooms and Similar		Stationery.....	12
Ward Room, Bright.....	3-5	Spaces.....	6	Telegraph:	
Operating Room (major).....	1000	Gymnasiums, Auditoriums, As-		Operating.....	12
Corridor.....	3	sembly Rooms, Museums,		Telephone:	
		Art Galleries.....	6-20	Manual Exchanges.....	4
				Automatic Exchanges.....	12
				Window (Show).....	50-2500

Direction of Light:

For utilitarian purposes it is usually preferable to provide a *dominant downward component* of light upon the object to be viewed (preferably somewhat from one side). Unidirectional light unrelieved by other general light is rarely desirable.

Shadows:

Shadows which obscure the object impede operations and often create hazards. Unnatural or improper direction of light produces shadows which are likely to be misleading. Multiple shadows of similar degree are unnatural and confusing, especially if the shadows are well defined. Shadows which outline the object viewed, aid in clear perception of form and establish perspective.

Color:

In general, various media reflect, absorb or transmit light selectively. For instance, white glass or slightly tarnished silver absorbs more blue than red rays, and the result is a light of a slightly yellow color.

A color appears more saturated as its brightness is decreased and vice versa. In general, the appearance of a color is modified by its color environment. Hues of the longer wave length such as red and yellow, are usually stimulating; while those of the shorter wave lengths, such as green and blue, are usually depressing.

For most utilitarian visual purposes, daylight quality is usually preferred. Colored lighting has effective application in colored display window lighting. In this use, color association is of great importance.

Glare:

Glare diminishes the ability to see objects and causes ocular discomfort and fatigue. Under some conditions, particularly in street and *industrial lighting*, glare constitutes a hazard.

Glare is caused by extreme contrasts between a local area and the average brightness of the surrounding field, or less commonly, by an extreme brightness of the whole field of view or an image of the source reflected more or less spectrally from a polished surface. The effect is more pronounced when the source of glare is near the center of the visual field (i. e. between the angle of 60° to 90° from the vertical.)

For a fixed position of light source with reference to the eye, glare depends upon the following:

- Contrast with background.
- Brightness of the source.
- Total flux in the 60° to 90° zone.

The total flux of light in the 60° to 90° zone is a more important factor among these items than it is generally thought to be.

The following chart shows graphically what part of the illumination from any given luminaire reaches useful points either directly from the luminaire or indirectly from the ceiling.

Light delivered in the angle 60° to 90° (from axis of lamp) is not only wasted light, but is harmful to clear vision, because it enters the eye in this critical angle, causing glare.

ILLUMINATING ENGINEERING DATA

1. The 0° – 60° zone represents useful light that is received directly on the work.
2. The 60° – 90° zone represents light that is directed into the eye and causes glare.
3. The 90° – 180° zone represents useful light that is directed to the ceiling to be re-directed to the work.

It follows that the ideal reflector would have maximum light in the 0° – 60° and the 90° – 180° zones, and minimum light in the 60° – 90° zone.

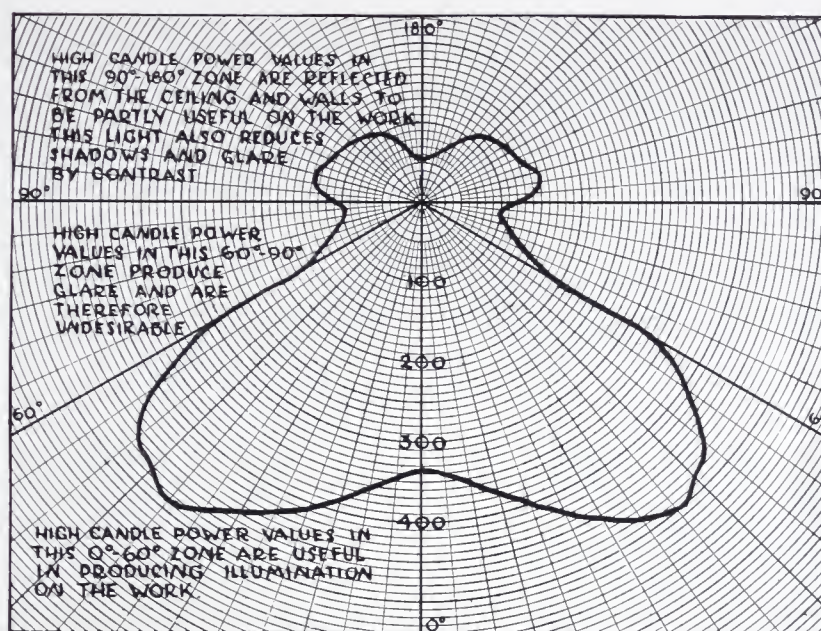


Chart showing what portions of a distribution curve of a reflector are useful in delivering light directly to the work, indirectly to the work, and the portion of the curve that produces glare.

Glare effects are influenced quantitatively by the immediately preceding exposure of the eye to light, being more pronounced if the eye is adapted to relative darkness. Glare is decreased as the source is removed from the center of the field of view, or as it recedes from the eye. Glare is also lessened by increasing the brightness of the background. Glaring installations are often wrongly criticized as being illuminated at too high an intensity, whereas the intensity is often not high enough.

General Appearance of the Lighted Room:

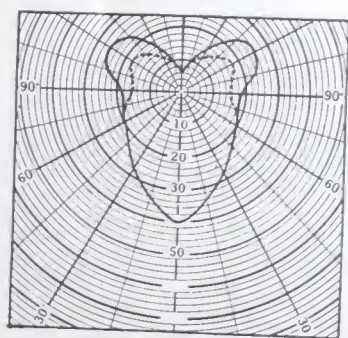
The importance of the general appearance of the lighted room cannot be over-estimated. Frequently spaces are well illuminated as regards intensity of illumination, glare and uniformity, but have a gloomy appearance and depressing effect on the occupants. In school, office and industrial work, this is particularly important because of the effect on the mental process due to this psychological factor.

Depreciation Factor and Maintenance:

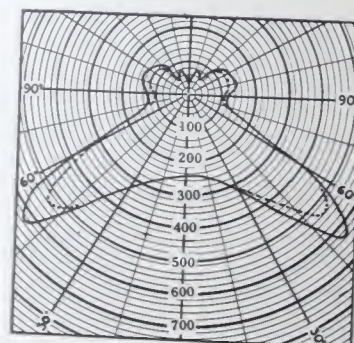
The efficiency of any lighting system gradually falls off due to the ageing of the lamps, dust accumulations on the lamp and reflector, and depreciation of the reflecting value of the ceiling and walls. It is important to keep the accumulated effect of this reduction in efficiency as low as possible, and it is good practice to apply a depreciation factor to all illumination calculations so that the desired illumination values will be obtained after depreciation. If a good magnesia base paint is used on the ceiling and walls and the lamps and reflectors are cleaned once every two months, a depreciation of 20 per cent (multiplying factor 1.25) should be used with all Holophane light directors.

It should be noted that there is no permanent depreciation of Holophane light directors as the initial efficiency is restored by cleaning.

Careful attention has been given to the question of light loss caused by dirt and dust accumulation on Holophane light directors. They are designed so as to reduce this loss to a minimum. Tests made in the Holophane laboratories and confirmed by similar tests at the Electrical Testing Laboratories, show that the loss of light for Holophane light directors due to dust and dirt accumulations is confined to the transmitted light passing through the reflector to the ceiling, whereas the downward light is only slightly affected.



The above curve shows the effect of the dust accumulations of four months on a Holophane light director having refracting and diffusing prisms. The full line shows the cleaned light director and the dotted line shows the dusty light director.



















The above curve shows the effect of dust accumulations of eight months on Holophane light director having prisms of the reflecting type. The full line shows the cleaned light director and the dotted line shows the dusty light director.

Recent data on the effect of dust and dirt on reflector equipment, reported by Anderson and Ketch of the National Lamp Works of the General Electric Company, before the Illuminating Engineering Society, gives accurate information on the depreciation of modern lighting equipment due to dust and dirt, and their data is reproduced in part in the following tabulation.

It will be noted from this tabulation that Holophane light directors of both the direct and indirect types (Items 2 and 16), compares most favorably with other reflector types.

ILLUMINATING ENGINEERING DATA

ACTUAL DEPRECIATION OF LIGHTING EQUIPMENT AS AFFECTED BY EQUIPMENT DESIGN*

Luminaire	Description	Actual Depreciation 120 Days Dry Fine Dust	Luminaire	Description	Actual Depreciation 120 Days Dry Fine Dust
1 	Dense opal glass—clear lamp	11.2	9 	Frosted ball—top and bottom open	15.0
2 	Prismatic glass—clear lamp	12.4	10 	Semi-enclosing opal bowl with diffusing plate	27.2
3 	Deep enameled steel bowl—clear lamp	11.5	11 	Dense opal bowl	22.5
4 	RLM Dome—clear lamp	12.8	12 	Enameled metal reflector with opal glass bottom	26.0
5 	RLM Dome — bowl-enameled lamp	16.3	13 	Mirrored glass bowl	26.2
6 	Diffusing globe and enameled steel reflector	22.9	14 	Clear top with bottom opening	35.6
7 	Diffusing globe—no vent	13.4	15 	Clear top without bottom opening	15.0
8 	Diffusing globe—bottom vent	22.7	16 	Prismatic , without bottom opening	10.1

Coefficient of Utilization:

The coefficient of utilization is the proportion of the total light flux emitted by the lamps effective on the work. The coefficient of utilization is the true measure of the effectiveness of a luminaire and should not be confused with such terms as "overall efficiency" which are misleading. Thus it is quite possible for a lighting unit having an overall efficiency of 80% to have a coefficient of utilization of 70%, while another unit installed in the same room, having as high an overall efficiency as 90%, may have a coefficient of utilization of only 55%.

The coefficient of utilization involves many factors, such as the room length, room width, the ceiling height, the reflection factor of the ceiling and walls, and to a very great degree, the type of the lighting unit. It has been found that large rooms can be lighted more efficiently than small ones and that as the mounting height is increased, the efficiency of the system is reduced. The charts on pages 10 and 11 show a series of values called the "Room Index," for various room dimensions and mounting heights of the luminaire. These charts are used in conjunction with Table III to determine the coefficient of utilization of Holophane light directors for various conditions of use.

*Transaction of Illuminating Engineering Society, Anderson and Ketch, Vol. XIX, No. 1, 1924.

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TABLE II
Luminous Flux Emitted by Mazda Lamps.
(Standard Lighting Service 110-125 Volts)

Size of Lamp in Watts	Lumens	*Light Center Length
15	122	2 $\frac{3}{8}$
25	225	2 $\frac{1}{2}$
40	400	2 $\frac{7}{8}$
50	520	3 $\frac{3}{8}$
60	666	3 $\frac{3}{4}$
75	920	4 $\frac{3}{8}$
100	1350	5 $\frac{3}{16}$
†100	1320	4 $\frac{3}{8}$
150	2300	5 $\frac{1}{4}$
200	3200	6
300	5200	7
400	7000	7
500	9500	7
750	14700	9 $\frac{1}{2}$
1000	21000	9 $\frac{1}{2}$
1500	33000	9 $\frac{1}{2}$

*Light center length is distance in inches from contact point of lamp to center of filament.

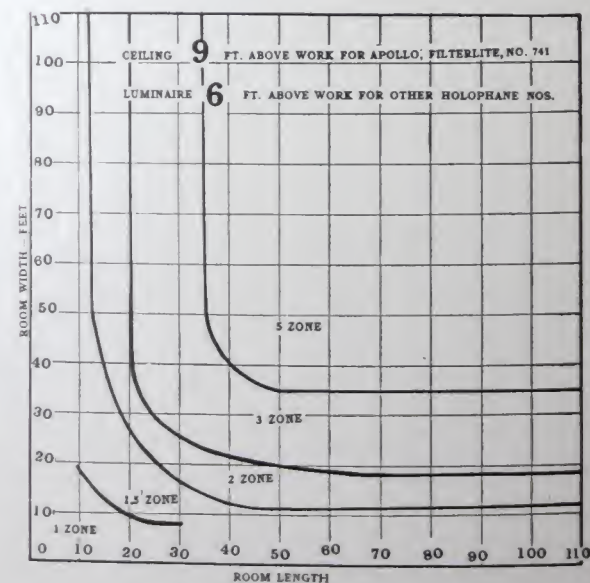
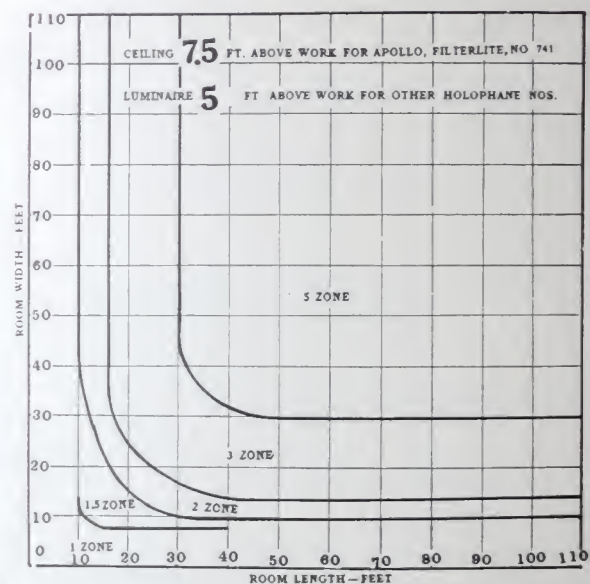
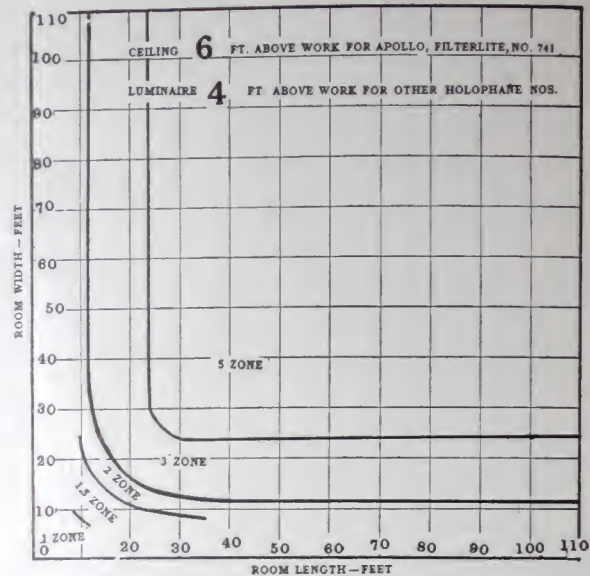
†The new inside frosted lamp.

When the 100 Watt Inside Frosted Lamp is used in Holophane Light Directors, the difference in light center of $\frac{1}{8}$ " shorter than the clear 100 Watt Lamp should be compensated for by changing the holder from Form "H" to Form "O," or by using a socket extension.

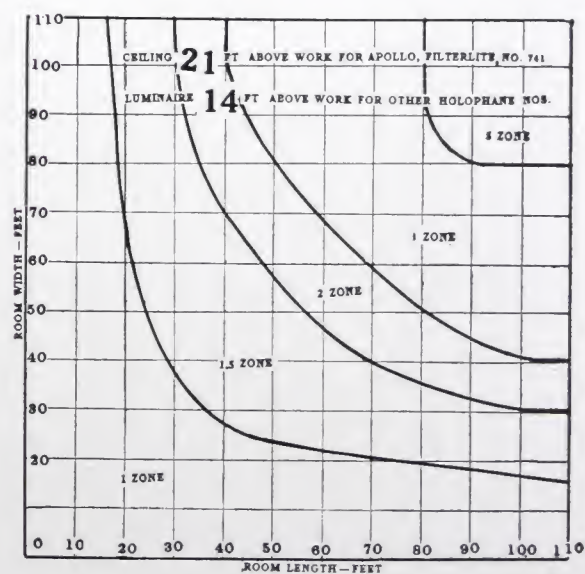
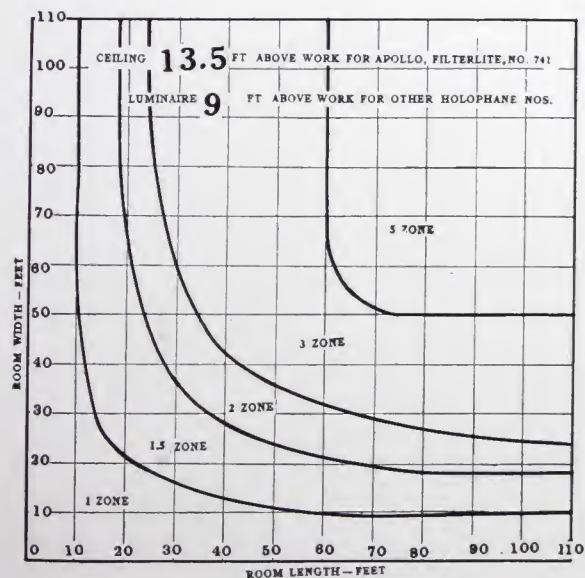
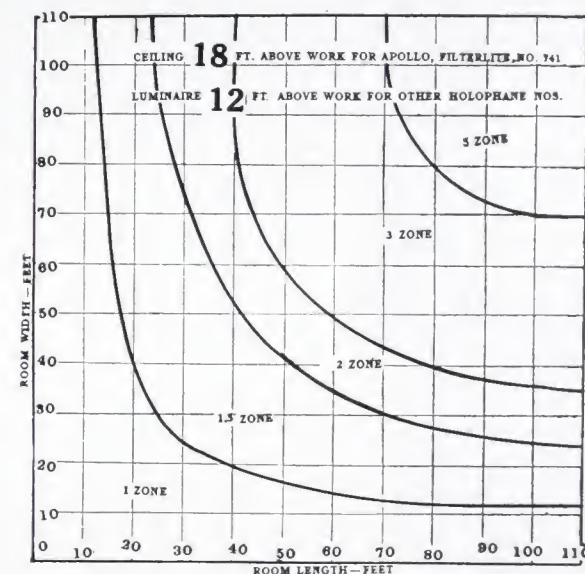
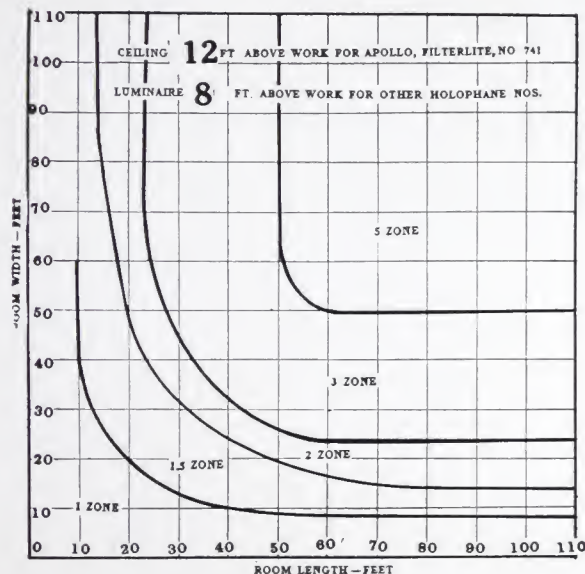
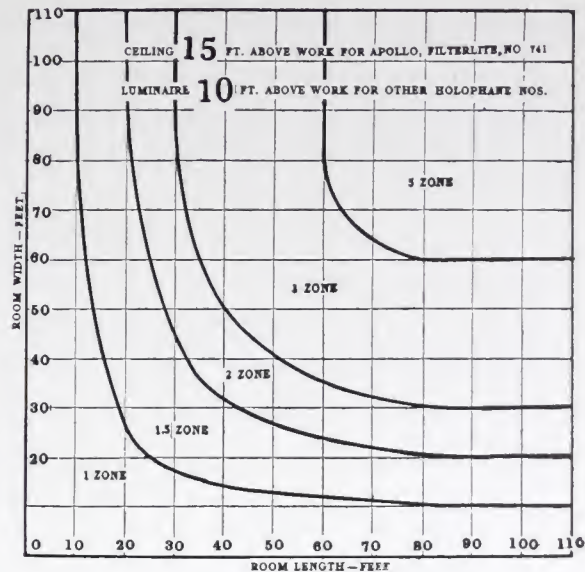
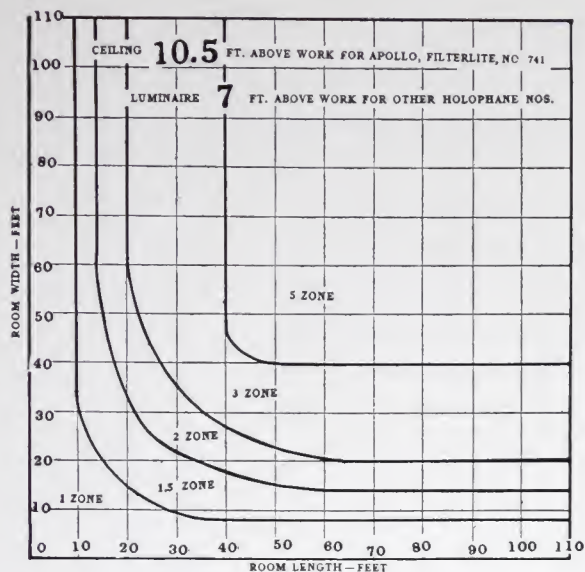
Nos. 622 and 671 are exceptions to this rule and no correction is necessary.

ROOM INDEX

The following charts show the room indices for various sized rooms and ceiling heights met with in ordinary lighting practice. It should be especially noted that in the case of the Filterlite and No. 741 light directors, the charts refer to distances between ceiling and work, while in the case of other Holophane light directors, the mounting heights of the light directors above the work are shown in the chart. In cases where the room index falls on one of the curved lines, the lower value of room index should be used. For rooms larger than those shown on the chart, a room index of 5 should be used, and for rooms smaller than those shown on the chart, a room index of 1 should be used. All room indices of "one" lie in the "1 zone"; "two" in the "2 zone," etc.



ILLUMINATING ENGINEERING DATA



ILLUMINATING ENGINEERING DATA











Coefficients of Utilization: (See Page 9):

The coefficients of utilization shown below are applicable to Holophane light directors for the ordinary room dimensions shown in the charts on Pages 10 and 11. For reflection factors not shown, the coefficient of utilization should be estimated from the nearest value given.

Coefficient of Utilization*

TABLE III

Find Room Index from Charts on Pages 10 and 11.

	Reflection Factor Percent. See Page 14	Ceiling	50				60				70				80			
		Walls	20	30	40	50	20	30	40	50	20	30	40	50	20	30	40	50
	Reflector Type	Room Index	Coefficients of Utilization															
Hol. No. XE	 Clear Lamp. 90° to 180°-22.1%  0° to 90°-60.0%	1	.30	.32	.34	.36	.31	.33	.35	.37	.31	.33	.35	.38	.32	.34	.36	.39
		1.5	.36	.38	.41	.42	.37	.39	.41	.43	.38	.40	.42	.45	.39	.41	.43	.46
		2	.42	.43	.46	.46	.42	.44	.46	.48	.43	.45	.47	.50	.44	.46	.49	.51
		3	.47	.48	.52	.52	.48	.50	.52	.54	.50	.52	.54	.56	.50	.53	.55	.58
		5	.53	.54	.57	.58	.54	.56	.58	.60	.56	.58	.60	.62	.58	.60	.62	.64
Hol. No. XI	 Clear Lamp. 90° to 180°-20%  0° to 90°-63.7%	1	.33	.35	.37	.40	.34	.36	.38	.40	.34	.36	.38	.41	.35	.37	.40	.43
		1.5	.40	.42	.44	.46	.41	.43	.45	.47	.42	.43	.46	.49	.43	.45	.47	.50
		2	.45	.47	.49	.51	.46	.48	.50	.52	.47	.50	.52	.54	.49	.51	.53	.56
		3	.51	.53	.56	.57	.52	.55	.57	.59	.54	.56	.59	.61	.55	.58	.60	.63
		5	.57	.59	.61	.62	.59	.61	.63	.65	.61	.63	.65	.67	.63	.65	.67	.69
Hol. No. 653.654-6531 6533-6541-6543-6583	 Clear Lamp. 90° to 180°-15.0%  0° to 90°-70.0%	1	.39	.40	.42	.44	.39	.41	.43	.45	.39	.41	.43	.45	.40	.42	.44	.47
		1.5	.45	.47	.48	.50	.46	.48	.50	.52	.47	.49	.50	.53	.48	.50	.51	.54
		2	.50	.52	.54	.55	.51	.53	.55	.56	.52	.54	.56	.58	.53	.55	.57	.59
		3	.56	.58	.60	.61	.57	.59	.61	.63	.59	.61	.63	.65	.59	.62	.64	.66
		5	.62	.63	.65	.67	.63	.65	.67	.68	.65	.67	.68	.70	.66	.68	.70	.72
Hol. No. CSE	 Clear Lamp. 90° to 180°-19%  0° to 90°-66%	1	.35	.37	.39	.40	.35	.37	.39	.41	.36	.37	.40	.42	.36	.38	.40	.46
		1.5	.41	.43	.45	.47	.42	.44	.46	.48	.42	.45	.47	.50	.44	.46	.48	.52
		2	.46	.48	.50	.51	.47	.49	.51	.53	.48	.50	.52	.55	.49	.51	.54	.57
		3	.52	.54	.56	.57	.53	.55	.57	.59	.55	.58	.59	.61	.56	.58	.61	.64
		5	.58	.59	.61	.63	.59	.61	.63	.65	.61	.63	.66	.67	.63	.64	.65	.70
Hol. No. CSI	 Clear Lamp. 90° to 180°-18%  0° to 90°-68%	1	.37	.39	.41	.42	.38	.39	.41	.44	.38	.40	.42	.44	.39	.42	.43	.45
		1.5	.44	.46	.47	.47	.45	.47	.48	.50	.46	.47	.49	.52	.47	.49	.50	.53
		2	.49	.50	.52	.54	.49	.51	.54	.55	.52	.53	.55	.57	.53	.54	.56	.58
		3	.55	.56	.58	.60	.56	.58	.60	.62	.57	.59	.62	.63	.58	.61	.63	.65
		5	.60	.62	.64	.65	.62	.64	.65	.67	.64	.65	.68	.69	.65	.67	.69	.71











*Calculated from data by Harrison and Anderson.

ILLUMINATING ENGINEERING DATA

Coefficient of Utilization*

TABLE III—Continued

Find Room Index from Charts on Pages 10 and 11.

	Reflection Factor Percent. See Page 14	Ceil- ing	50				60				70				80			
		Walls	20	30	40	50	20	30	40	50	20	30	40	50	20	30	40	50
	Reflector Type	Room Index	Coefficients of Utilization															
Hol. Nos. 2110-2120 2130-2140-2170-2180	 Clear Lamp. 90° to 180°-23.6%  0° to 90°-60.5%	1	.33	.36	.38	.39	.35	.36	.38	.40	.35	.37	.39	.41	.36	.38	.40	.42
		1.5	.39	.42	.43	.45	.41	.43	.45	.47	.42	.43	.46	.48	.43	.45	.47	.50
		2	.45	.46	.48	.50	.46	.48	.50	.51	.46	.49	.51	.53	.49	.51	.53	.55
		3	.50	.52	.54	.55	.52	.54	.56	.57	.54	.56	.58	.60	.55	.57	.59	.62
		5	.56	.58	.59	.62	.58	.60	.62	.63	.60	.61	.64	.65	.62	.63	.65	.68
Hol. Filterlite	 Clear Lamp. 90° to 180°-57%  0° to 90°-26%	1	.17	.19	.20	.22	.19	.20	.22	.24	.20	.22	.24	.28	.22	.25	.27	.30
		1.5	.20	.22	.25	.28	.24	.26	.28	.30	.28	.29	.31	.33	.30	.32	.34	.37
		2	.26	.27	.28	.31	.28	.30	.32	.34	.31	.33	.35	.37	.34	.36	.39	.42
		3	.31	.32	.34	.36	.34	.36	.38	.40	.37	.39	.41	.44	.41	.43	.46	.48
		5	.37	.38	.40	.42	.40	.42	.44	.48	.45	.46	.48	.51	.49	.51	.53	.55
Hol. Nos. 2208-2328	 Clear Lamp. 90° to 180°-23%  0° to 90°-58%	1	.33	.34	.36	.38	.33	.35	.37	.39	.34	.35	.37	.40	.35	.37	.39	.41
		1.5	.39	.40	.42	.44	.39	.41	.43	.45	.41	.42	.44	.47	.42	.44	.45	.48
		2	.43	.44	.46	.48	.44	.46	.48	.49	.45	.47	.49	.51	.47	.48	.51	.53
		3	.49	.50	.52	.53	.50	.52	.54	.55	.52	.53	.55	.57	.53	.55	.57	.59
		5	.54	.55	.57	.58	.56	.57	.59	.61	.58	.59	.61	.63	.59	.61	.63	.65
Hol. Nos. 671	 Clear Lamp. 90° to 180°-24.3%  0° to 90°-70.1%	1	.41	.43	.45	.47	.42	.44	.46	.48	.42	.44	.46	.49	.44	.46	.48	.59
		1.5	.48	.51	.52	.54	.49	.51	.53	.55	.50	.53	.54	.57	.52	.54	.56	.60
		2	.54	.55	.57	.59	.54	.57	.59	.60	.56	.58	.60	.62	.58	.60	.61	.64
		3	.59	.62	.63	.65	.61	.63	.65	.67	.63	.66	.67	.70	.64	.67	.69	.72
		5	.66	.68	.69	.71	.68	.69	.71	.73	.70	.72	.74	.75	.72	.73	.76	.78
Hol. Nos. 622-652	 Clear Lamp. 90° to 180°-18%  0° to 90°-73%	1	.42	.43	.46	.47	.42	.44	.46	.48	.43	.44	.46	.49	.44	.46	.48	.50
		1.5	.49	.50	.52	.54	.49	.52	.53	.55	.50	.53	.54	.57	.51	.54	.55	.58
		2	.54	.56	.57	.59	.55	.57	.59	.61	.56	.58	.60	.62	.57	.59	.62	.64
		3	.60	.62	.64	.66	.61	.64	.65	.67	.63	.65	.67	.69	.64	.66	.68	.71
		5	.66	.67	.69	.71	.68	.69	.71	.73	.69	.71	.73	.75	.71	.72	.75	.77

*Calculated from data by Harrison and Anderson.

Specifics vs. Standard Reflectors for Industrial Lighting:

After a most exhaustive study of the requirements of industrial lighting in all of the industries, the Holophane Company has for the past five years abandoned the prevalent idea that a so-called standard reflector can be used for all types of service. Holophane light directors for industrial use are especially designed for specific application and are in no sense standard for all uses. Only by designing industrial lighting equipment to fulfill the requirements of specific application, maximum utilization efficiency can always be realized.*

All Holophane industrial light directors have the following characteristics:

- (1) The greatest possible *utilization* efficiency. The light is distributed where it can be used by the eye to see by without wasting it.
- (2) A light distribution specially adapted to each application.
- (3) Sufficient light transmitted to the ceiling to give natural daylight appearance.
- (4) No permanent depreciation of reflecting surface.
- (5) *Lowest temporary depreciation (due to dust and dirt) of any industrial lighting reflectors.

Some of these specifics are the C-2172 Asymmetric light director (Page 32), the No. 681-AL and No. 691-AL High Mounting Height light director (Page 23), the No. 671 Localized General Lighting light director (Page 24-25) the Yard Lighting light director (Page 26-27) and the Wide Spread light director (Page 28).

Reflection Factors of Walls and Ceiling:

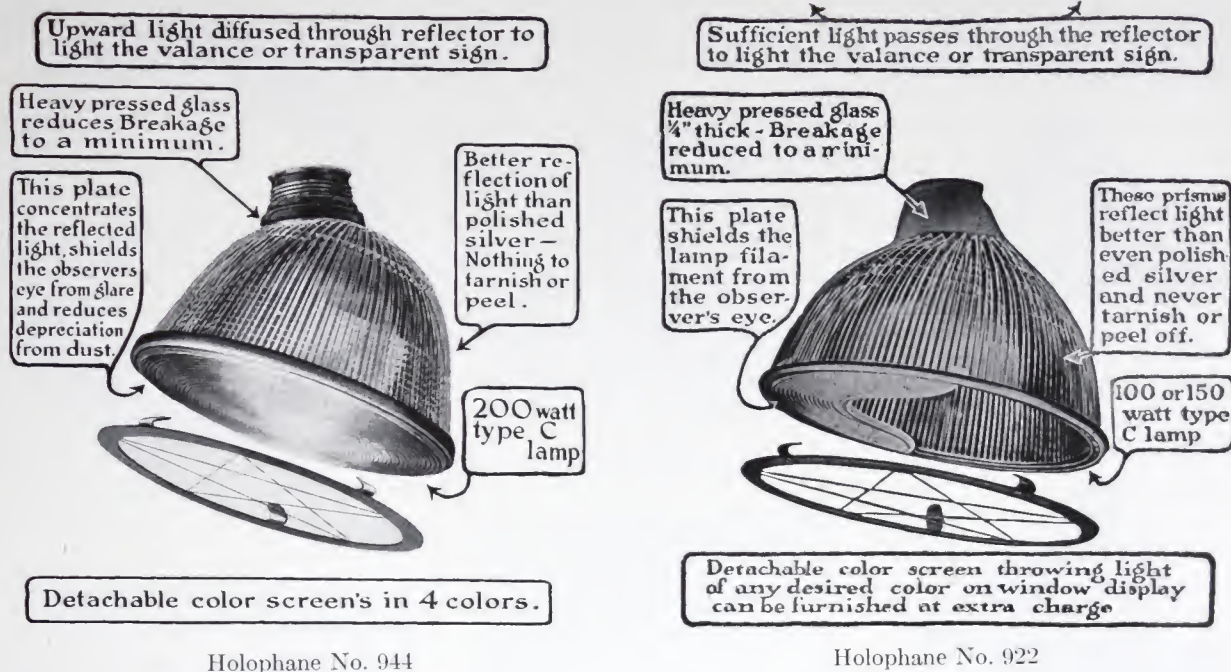
A perfectly white wall or ceiling surface would reflect 100% of the light which falls on it and an absolutely black wall would reflect no light. Between these theoretical limits there is a vast range of reflecting values. The best white paint reflects approximately 85% of the light which falls on it.

In general it may be assumed that white paint, when new, will have a reflection factor of approximately 80%; light tints of yellow such as creams and ivories 70%; and so-called French gray 45%.

Buildings of the "saw tooth" type have extremely low ceiling reflection values because of the large glass area. In like manner, walls having large glass area have a low reflection value. A modern industrial plant of the Fenestra window type will have an effective wall reflection value of approximately only 20%. A room having windows in one-half of the wall surface would have an effective wall reflection factor of approximately one-half the reflection value of the wall paint.

*See Pages 8 and 9.

HOLOPHANE LIGHT DIRECTORS FOR SHOW WINDOW LIGHTING



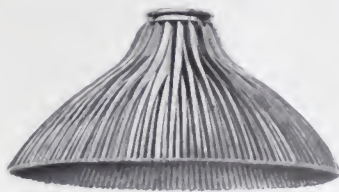
HOLOPHANE LIGHT DIRECTORS for WINDOWS—

1. DELIVER MORE LIGHT ON THE DISPLAY.
2. LIGHT THE TRANSPARENT SIGN UNIFORMLY.
3. DO NOT PEEL, TARNISH or DISCOLOR.
4. HAVE NO PERMANENT DEPRECIATION.
5. THE LAMP IS NOT SEEN FROM THE STREET OR THE INSIDE OF THE STORE.
6. DO NOT CHANGE THE COLOR OF THE MAZDA LIGHT.
7. COLOR EFFECT CAN BE OBTAINED BY USING COLOR FILTERS.
8. MINIMUM BREAKAGE BECAUSE OF STURDY CONSTRUCTION.
9. INDIVIDUAL CARTON PACKED.

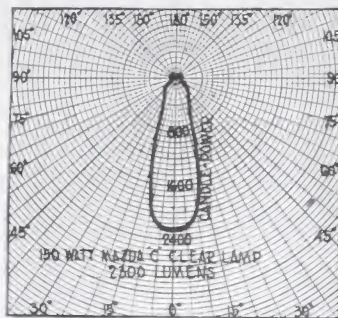
For other methods of show window lighting see Holophane Prismatic Control Lenses on pages 38 and 39.

HOLOPHANE LIGHT DIRECTORS FOR SHOW WINDOW LIGHTING

Holophane prismatic window reflectors are designed for maximum initial efficiency. They are not subject to permanent depreciation as they are made entirely of glass and cannot tarnish, peel or discolor. Depreciation from dust and dirt accumulation is no greater than with other window lighting equipment and can easily be remedied by regular cleaning, a necessary part of the maintenance of any lighting system.



No. 963

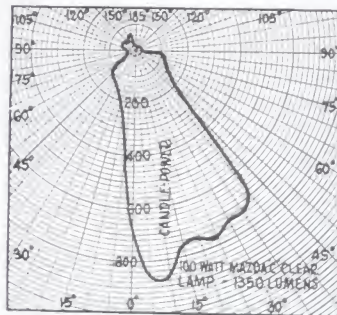


Characteristic Curve
No. 963

No. 963 gives maximum efficiency with 100 or 150 watt lamp in high shallow windows.



Nos. 981, 983

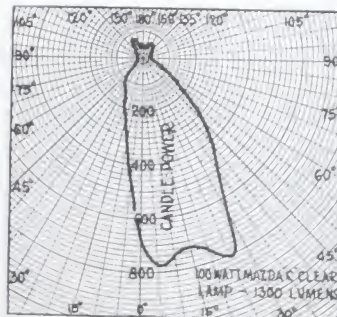


Characteristic Curve
No. 981-983

No. 983 also for 100 or 150 watt lamp. For deep enclosed back windows where the added refinement of the anti-glare plate is unnecessary.



No. 922

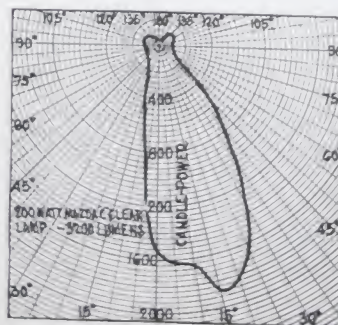


Characteristic Curve
No. 922

No. 922 for 100 or 150 watt lamp. The most popular window reflector. The diffusing plate eliminates glare.



No. 944



Characteristic Curve
No. 944

No. 944 is a 200 watt completely enclosed window reflector and absolutely prevents glare.

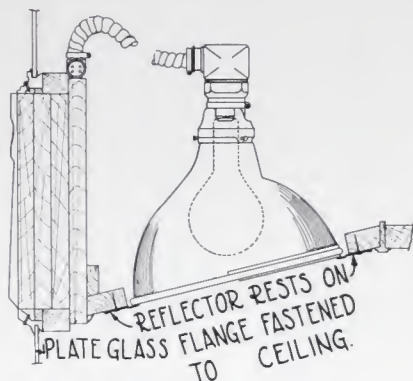
For use in open back windows and main thoroughfare windows, requiring high lighting intensity.

HOLOPHANE LIGHT DIRECTORS FOR SHOW WINDOW LIGHTING

All of the types listed below are designed to eliminate glare, particularly the enclosing units, and to reduce shadow to an absolute minimum. Correct spacing is on 12" centers with socket 6" from plate glass front.



Ceiling Flanges
963F—983F—922F—944F



Method of Mounting the Holo-
phane Ceiling Flanges for Window
Reflectors

The flanges are made of gal-
vanized iron, Duco gray finish
and are recommended for in-
stallations where the reflectors
are recessed above false ceil-
ings.



Holophane Color Filters
Set of 4 colors Red, Green, Blue
and Amber
963B—983B—922B—944B



Method of Attaching the Holo-
phane Color Filter

Color filters are non-inflam-
mable gelatin held in flexible
wire supports in steel rings.
Each set consists of four dif-
ferent color filters.

SCHEDULE "R" DISCOUNTS

Holo. No.	List Price Each	Standard Quantity	Shipping Weight Std. Pkg.	Dimensions in Inches			Mazda Lamp
				Diameter	Height	Holder	
963	\$3.00	12	68	10 ⁵ / ₈ "	5 ¹ / ₄ "	2 ¹ / ₄ "-H	100†—150
981	2.00	30	76	8 ⁵ / ₈ "	5"	2 ¹ / ₄ "-O	75 —100I.F.
983	3.00	12	80	10 ³ / ₈ "	6 ¹ / ₂ "	2 ¹ / ₄ "-H	100†—150
922	4.50	10	78	9 ¹ / ₂ "	7 ¹ / ₂ "	2 ¹ / ₄ "-H	100†—150
944	7.00	8	86	10"	9 ¹ / ₄ "	2 ¹ / ₄ "-O	200
963-F	1.60	12	15	12 ¹ / ₂ "	Ceiling Flange for No. 963		
981-F	1.60	30	15	10 ¹ / ₂ "	Ceiling Flange for No. 981		
983-F	1.60	12	15	12 ¹ / ₄ "	Ceiling Flange for No. 983		
922-F	1.60	10	15	11 ³ / ₈ "	Ceiling Flange for No. 922		
944-F	1.60	8	15	11 ⁷ / ₈ "	Ceiling Flange for No. 944		
963-B	5.80	12	Complete Set of Four Filters for Reflector No. 963				
983-B	5.80	12	Complete Set of Four Filters for Reflector No. 983				
922-B	5.80	10	Complete Set of Four Filters for Reflector No. 922				
944-B	5.80	8	Complete Set of Four Filters for Reflector No. 944				

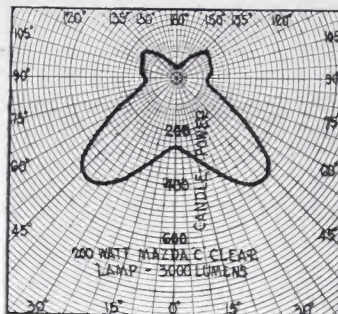
†Use $\frac{7}{8}$ " socket extension with inside frosted lamp, or change to form "O" holder.

HOLOPHANE REFLECTOR-REFRACTORS—DIRECT LIGHTING

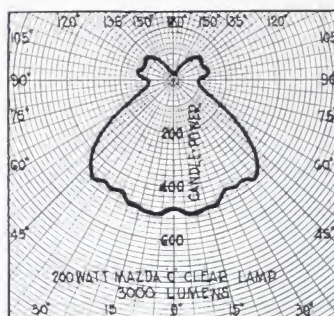
Reflector-refractors are direct lighting units which completely enclose the lamp and deliver the utmost obtainable useful illumination on the working plane. Furnished in extensive and intensive type of distribution in the two piece design, which has a removable bottom glass cup, permitting easy relamping.



Ceiling Type
(C)



Extensive Characteristic Curve



Intensive Characteristic Curve

EXTENSIVE

For low ceilings where the spacing is not more than twice the mounting height above the working plane.

C-2110, C-2120, C-2130, C-2140, C-2140—6", C-2170, C-2180.

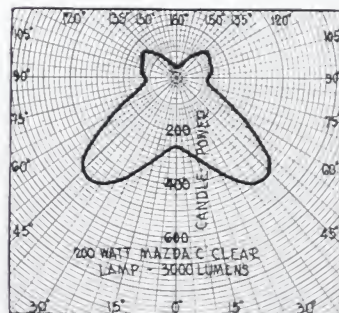
INTENSIVE

For low ceilings where the spacing is not more than $1\frac{1}{4}$ times the mounting height above the working plane.

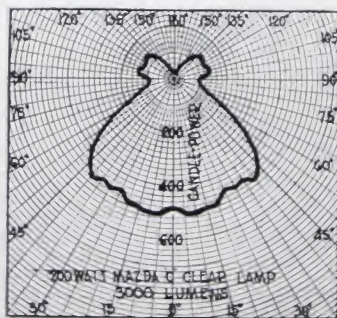
C-2133, C-2143, C-2143—6".



Suspension Type
(S)



Extensive Characteristic Curve



Intensive Characteristic Curve

EXTENSIVE

For high ceilings where the spacing is not more than twice the mounting height above the working plane.

S-2110, S-2120, S-2130, S-2140, S-2140—6", S-2170, S-2180.

INTENSIVE

For high ceilings where the spacing is not more than $1\frac{1}{4}$ times the mounting height above the working plane.

S-2133, S-2143, S-2143—6".

HOLOPHANE REFLECTOR-REFRACTORS—DIRECT LIGHTING

Reflector-Refractors are also supplied in one piece design* extensive distribution only for 100 to 200 watt lamps inclusive. Fixtures are heavy gauge brass, embossed design suitable for high class interiors. Standard finish statuary bronze, brush brass finish furnished without extra charge on special orders.

SCHEDULE "R" DISCOUNTS

Complete Unit	Fixture Only	Glass Only	Distribution	List Price Each	Std. Quant.	Ship Weight Std. Qt.	Dimensions		Mazda Lamp
							Diameter	Depth	
C-2110†	----	----	Extensive	\$5.80	12	60	7½"	10½"	75-100
	0391	----	-----	2.80	12	20	6"	4⅝"	
		2110	Extensive	3.00	12	40	7½"	6⅛"	75-100
C-2120	----	----	Extensive	7.50	8	69	9¾"	12"	100†-150
	0392	----	-----	3.00	8	20	6"	4½"	
		2120	Extensive	4.50	8	48	9¾"	7¾"	100†-150
C-2130	----	----	Extensive	14.00	4	60	11⅞"	13¾"	200
	0393	----	-----	3.50	4	20	6"	4⅝"	
		2130	Extensive	10.50	4	48	11⅞"	9⅜"	200
C-2133	----	----	Intensive	14.00	4	60	11⅞"	13¾"	200
	0393	----	-----	3.50	4	20	6"	4⅝"	
		2133	Intensive	10.50	4	48	11⅞"	9⅜"	200
C-2140	----	----	Extensive	20.00	3	60	14"	15¼"	300-500
	0394	----	-----	5.00	3	18	6"	4⅝"	
		2140	Extensive	15.00	3	48	14"	11"	300-500
C-2140-6"†	----	----	Extensive	20.00	3	60	14"	16⅛"	300-500
	0395	----	-----	5.00	3	22	8⅝"	6¼"	
		2140-6"	Extensive	15.00	3	51	14"	11"	300-500
C-2143	----	----	Intensive	20.00	3	60	14"	15¼"	300-500
	0394	----	-----	5.00	3	18	6"	4⅝"	
		2143	Intensive	15.00	3	48	14"	11"	300-500
C-2143-6"†	----	----	Intensive	20.00	3	60	14"	16⅛"	300-500
	0395	----	-----	5.00	3	22	8⅝"	6¼"	
		2143-6"	Intensive	15.00	3	51	14"	11"	300-500
C-2170*	----	----	Extensive	8.00	8	69	9⅞"	12"	100†-150
	0393	----	-----	3.50	8	20	6"	4⅝"	
		2170*	Extensive	4.50	8	55	9⅞"	7⅝"	100†-150
C-2180*	----	----	Extensive	14.50	4	59	12"	15"	200
	0398	----	-----	4.00	4	22	6"	5¾"	
		2180*	Extensive	10.50	4	48	12"	9⅜"	200
S-2110†	----	----	Extensive	7.80	12	70	7½"	29½"	75-100
	0371	----	-----	4.80	12	25	6"	23⅝"	
		2110	Extensive	3.00	12	40	7½"	6⅛"	75-100
S-2120	----	----	Extensive	9.50	8	81	9¾"	31⅛"	100†-150
	0372	----	-----	5.00	8	25	6"	23⅝"	
		2120	Extensive	4.50	8	48	9¾"	7¾"	100†-150
S-2130	----	----	Extensive	16.00	4	64	11⅞"	32¾"	200
	0373	----	-----	5.50	4	26	6"	23⅝"	
		2130	Extensive	10.50	4	48	11⅞"	9⅜"	200
S-2133	----	----	Intensive	16.00	4	64	11⅞"	32¾"	200
	0373	----	-----	5.50	4	26	6"	23⅝"	
		2133	Intensive	10.50	4	48	11⅞"	9⅜"	200
S-2140	----	----	Extensive	22.00	3	64	14"	34"	300-500
	0374	----	-----	7.00	3	20	6"	23⅝"	
		2140	Extensive	15.00	3	48	14"	11"	300-500
S-2140-6"†	----	----	Extensive	22.00	3	64	14"	35"	300-500
	0375	----	-----	7.00	3	22	6"	24⅞"	
		2140-6"	Extensive	15.00	3	51	14"	11"	300-500
S-2143	----	----	Intensive	22.00	3	64	14"	34"	300-500
	0374	----	-----	7.00	3	20	6"	23⅝"	
		2143	Intensive	15.00	3	51	14"	11"	300-500
S-2143-6"†	----	----	Intensive	22.00	3	64	14"	35"	300-500
	0375	----	-----	7.00	3	22	6"	24⅞"	
		2143-6"	Intensive	15.00	3	51	14"	11"	300-500
S-2170*	----	----	Extensive	10.00	8	81	9⅞"	31"	100†-150
	0373	----	-----	5.50	8	26	6"	23⅝"	
		2170*	Extensive	4.50	8	55	9⅞"	7⅝"	100†-150
S-2180*	----	----	Extensive	16.50	4	64	12"	33¼"	200
	0378	----	-----	6.00	4	20	6"	24"	
		2180*	Extensive	10.50	4	48	12"	9⅜"	200

Prices on special fixture finishes furnished on request.
 *One piece unit. †Fixtures plain design not embossed. ‡Use ⅞" socket extension with inside frosted lamp.
 No. 2170 Available with Screw Thread Fitter, see page 31.

HOLOPHANE FILTERLITE—INDIRECT LIGHTING

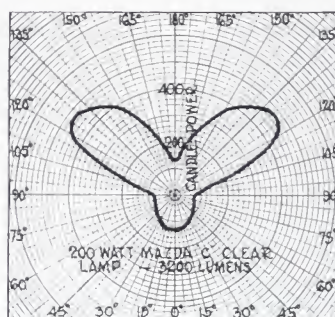
Filterlite is the latest, most efficient and most successfully dust resisting enclosing unit of the indirect lighting type.

Permanent depreciation is impossible. Temporary depreciation due to dust and dirt is at least 25% less rapid than with any other indirect lighting fixture. Approximately 70% of the light distribution is upward and 30% downward, producing little or no contrast between the brightness of the unit and the lighted ceiling. The upward light is thrown off at wide angles so that there are no ceiling shadows or bright spots and no definite cut off on the ceiling.

Fixtures are heavy gauge brass, embossed design suitable for high class interiors. Standard finish statuary bronze, brush brass furnished without extra charge on special orders.



Ceiling Type
CF—100, CF—200, CF—300

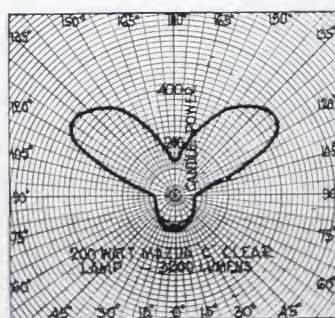


Characteristic Curve

For ceilings not exceeding 12 feet high. (Except on ceilings with interfering beams, use suspension type).



Suspension Type
F—100, F—200, F—300, F—500

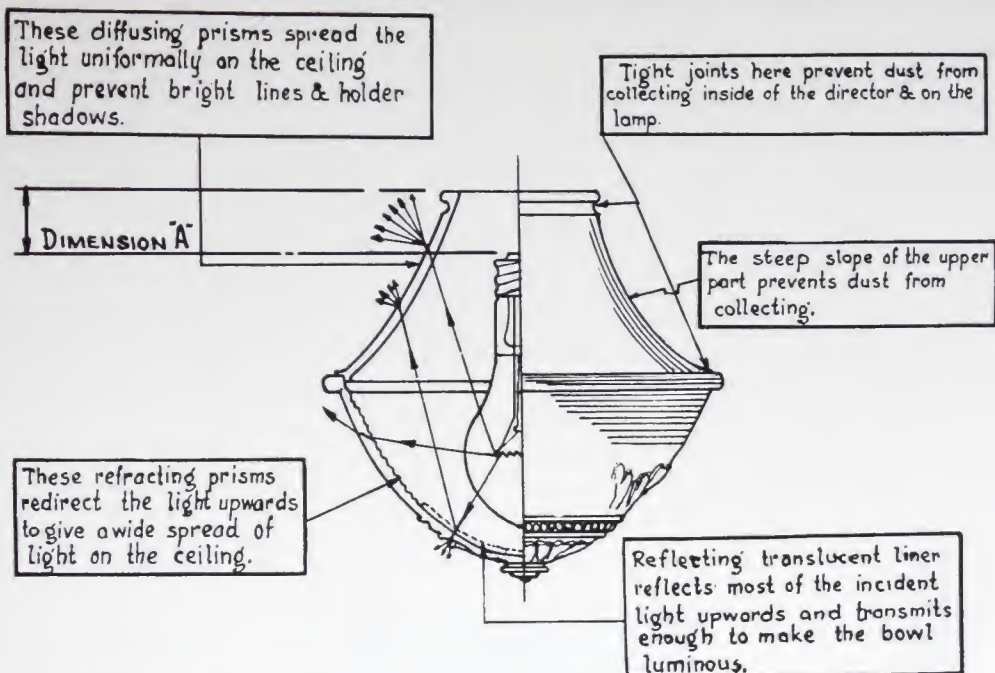


Characteristic Curve

For ceilings exceeding 12 feet high or on lower ceilings where there are interfering beams.

No. F-500 is regularly furnished with cast metal band and four chain suspension ornamental design.

HOLOPHANE FILTERLITE—INDIRECT LIGHTING



Dimension A is distance from center line of set screws to contact point of lamp.
150 Watts = $2\frac{1}{2}$ "; 200 Watts = $3\frac{3}{8}$ "; 300 Watts = $2\frac{3}{8}$ "

1. Highest efficiency (Indirect Lighting).
2. No permanent depreciation.
3. Lowest dirt depreciation (Indirect Lighting).
4. Low brilliancy (No Glare).
5. No ceiling shadows or streaks.
6. Broad light spread on ceiling.
7. No sharp cut-off on ceiling.
8. Excellent appearance (of the unit and the lighted interior).

SCHEDULE "R" DISCOUNTS

Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship Weight Each	Dimensions		Holder	Mazda Lamp
						Diameter	Depth		
CF-100	----	----	\$12.50	5	15	12"	15 $\frac{3}{8}$ "	4" Special	100†-150
	0400	----	3.50	5	20	6 $\frac{1}{8}$ "	5 $\frac{1}{8}$ "	4" "	
CF-200	----	7322	9.00	5	13	12"	10 $\frac{1}{2}$ "	4" "	100†-150
	----	----	18.00	4	23	14"	18 $\frac{1}{4}$ "	5 $\frac{5}{8}$ " "	200
	0401	----	5.00	4	24	6 $\frac{1}{8}$ "	6"	5 $\frac{5}{8}$ " "	
CF-300	----	7344	13.00	4	23	14"	12 $\frac{1}{2}$ "	5 $\frac{5}{8}$ " "	200
	----	----	19.00	3	24	14"	18 $\frac{1}{4}$ "	5 $\frac{5}{8}$ " "	300
	0402	----	6.00	3	25	6 $\frac{1}{8}$ "	6"	5 $\frac{5}{8}$ " "	
F-100	----	7344	13.00	3	23	14"	12 $\frac{1}{2}$ "	5 $\frac{5}{8}$ " "	300
	----	----	14.00	5	15	12"	37 $\frac{3}{8}$ "	4" "	100†-150
	0380	----	5.00	5	20	5 $\frac{1}{2}$ "	27 $\frac{1}{8}$ "	4" "	
F-200	----	7322	9.00	5	13	12"	10 $\frac{1}{2}$ "	4" "	100†-150
	----	----	19.00	4	24	14"	48 $\frac{3}{8}$ "	5 $\frac{5}{8}$ " "	200
	0381	----	6.00	4	26	6"	36 $\frac{1}{8}$ "	5 $\frac{5}{8}$ " "	
F-300	----	7344	13.00	4	23	14"	12 $\frac{1}{2}$ "	5 $\frac{5}{8}$ " "	200
	----	----	20.00	3	25	14"	48 $\frac{3}{8}$ "	5 $\frac{5}{8}$ " "	300
	0382	----	7.00	3	21	6"	36 $\frac{3}{8}$ "	5 $\frac{5}{8}$ " "	
F-500*	----	7344	13.00	3	23	14"	12 $\frac{1}{2}$ "	5 $\frac{5}{8}$ " "	300
	----	----	80.00	1	135	23"	72"	Special Band	500
	0383	----	55.00	1	50	9"	60"	" "	
		7388	25.00	1	85	18"	23"	" "	500

Prices on special fixture finishes furnished on request.

†Use $\frac{1}{8}$ " socket extension with inside frosted lamp.

*Has ornamental cast metal supporting ring at widest point of glass.

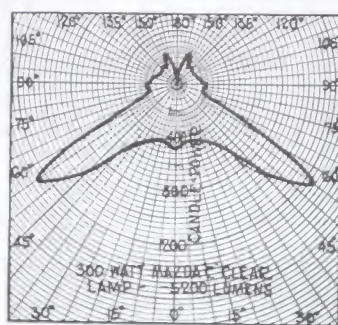
On special orders, polished metal liners will be supplied instead of the standard white glass liners at an additional list of \$1.00 for the 100-150 watt size, \$1.25 on the 200-300 watt size and \$2.00 on the 500 watt size.

HOLOPHANE LIGHT DIRECTORS FOR MAXIMUM VERTICAL* ILLUMINATION

Holophane Light Directors No. 622 and No. 652 are heavy duty Industrial units, designed to give maximum illumination on vertical surfaces (approximately twice the vertical* illumination provided by competitive equipment). The reflectors are heavy pressed prismatic glass and are quickly removable without tools for cleaning. In extremely dirty locations they are obtainable with dust-tight aluminum covers spun on permanently. The fixture stem is $\frac{3}{4}$ " Iron Conduit terminating in a loop with wire port. The tripod holder is steel and grips the fixture stem at a point to give correct focal position for the lamp. Standard fixture finish is "Udylite" (cadmium plated). Units are NOT wired. Packed in individual cartons.



No. 622-652



Characteristic Curve

Use on low ceilings where outlets are spaced from $1\frac{1}{2}$ to $2\frac{1}{2}$ times the mounting height, and on all installations where vertical* illumination is the first consideration.

SCHEDULE "I" DISCOUNTS

Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship Weight Std. Qt.	Dimensions		Socket	Mazda Lamp
						Diameter	Depth		
622	----	----	\$ 8.25	5	70	$11\frac{7}{8}"$	$20\frac{1}{4}"$	Medium	75-100-150-200
	0662	----	2.75	5	25	$11\frac{7}{8}"$	$20\frac{1}{4}"$	Medium	
652	----	6522	5.50	5	65	$11\frac{3}{8}"$	$6\frac{7}{8}"$	Medium	75-100-150-200
	0665	----	10.45	5	80	$12\frac{7}{8}"$	22"	Mogul	
622-AL†	----	6552	3.85	5	30	$12\frac{7}{8}"$	22"	Mogul	200‡-300-400-500
	0662	----	6.60	5	69	$12\frac{3}{8}"$	$7\frac{3}{8}"$	Mogul	
652-AL†	----	6522 AL	12.10	5	75	$11\frac{7}{8}"$	$20\frac{1}{4}"$	Medium	75-100-150-200
	0665	----	2.75	5	25	$11\frac{7}{8}"$	$20\frac{1}{4}"$	Medium	
652-AL†	----	6552 AL	9.35	5	69	$11\frac{3}{8}"$	$6\frac{7}{8}"$	Medium	75-100-150-200
	0665	----	14.30	5	85	$12\frac{7}{8}"$	22"	Mogul	
652-AL†	----	6552 AL	3.85	5	30	$12\frac{7}{8}"$	22"	Mogul	200‡-300-400-500
	0665	----	10.45	5	73	$12\frac{3}{8}"$	$7\frac{3}{8}"$	Mogul	

†Complete with dust-tight aluminum cover spun permanently over reflector.

*Vertical illumination means illumination on vertical planes and surfaces.

‡Socket adapter required to change from mogul to medium base lamp.

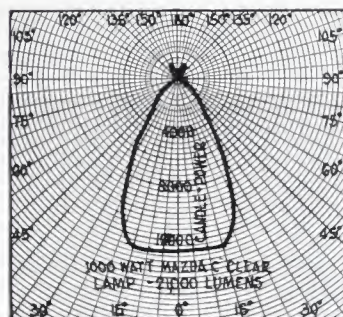
For wire guards see page 41.

HOLOPHANE HIGH BAY LIGHT DIRECTORS

Holophane Light Directors Nos. 681-AL and 691-AL are heavy duty Industrial units designed to give maximum downward illumination. These units are specifically intended for locations where the unit must be mounted at considerable heights above the work. (High Bays—Write for Bulletin "Lighting Specific for High Bays"). The reflectors are heavy pressed prismatic glass with dust-tight aluminum cover spun on permanently. The fixture stems are iron conduit terminating in a loop with wire port. The tripod holder is steel and grips the fixture stem at a point to give correct focal position for the lamp. The tripod is locked in position with a special retaining ring making it impossible for the reflector to fall. The sockets are heavy duty porcelain mill type with lamp grip. Standard fixture finish is "Udylite" (cadmium plated). Units are NOT wired. Packed in individual cartons.



No. 681-AL
No. 691-AL



Characteristic Curve

Use in all high bay locations—that is where the mounting height above work equals or exceeds the spacing distance.

SCHEDULE "I" DISCOUNTS

Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship Weight Std. Qt.	Dimensions		Mazda Lamp
						Diameter	Depth	
681-AL	----	-----	\$14.30	5	123	16"	21"	†200-300-500
	0673	-----	3.85	5	40	15 ⁷ / ₈ "	21"	
691-AL		6681-AL	10.45	5	83	15 ³ / ₈ "	7 ³ / ₄ "	†200-300
	----	-----	27.50	5	174	19 ³ / ₄ "	25"	750-1000
	0674	-----	9.50	5	50	19 ⁵ / ₈ "	25"	
691-AL-W*		6691-AL	18.00	5	124	19 ¹ / ₈ "	9 ³ / ₄ "	750-1000
	----	-----	40.00	5	520	23 ¹ / ₄ "	31"	750-1000

*Same as 691-AL but with Water Shed Aluminum outer housing with weather-proof fittings for outdoor use (Outdoor Craneways, Tennis Courts, Etc.).

For wire guards see prices on page 41.

†Use socket reducer.

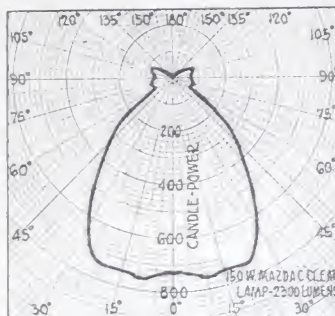
HOLOPHANE LIGHT DIRECTORS FOR GENERAL USE

These light directors are designed for general lighting in factories and Industrial plants where an intensive distribution is desirable but where the mounting height is not sufficiently great to justify the use of High Bay lighting equipment, or the requirements of the work such as would make necessary the use of units like No. 622 and No. 652 listed on page 22.

These units are usually recommended on ordinary factory ceiling heights up to but not exceeding 15 feet. The Nos. 653 and 654 series are made of heavy pressed prismatic glass with reinforced flange at the bottom edge. They are equipped with metal extension necks in three different types of construction to suit as many different wiring conditions. Metal parts, dull nickel finish.



No. 653—654

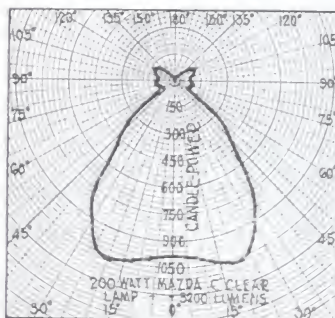


Characteristic Curve
653—6531—6533

For use with any standard $2\frac{1}{4}$ " form "O" holder.



No. 6531—6541

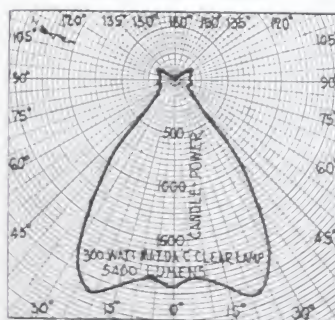


Characteristic Curve
654—6541—6543

For use on any 4" outlet box.



No. 6533—6543—6583

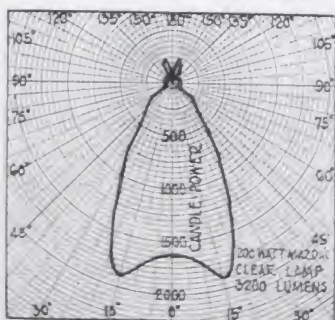


Characteristic Curve 6583

For use on $\frac{1}{2}$ " conduit or reinforced cord with $\frac{1}{2}$ " insulating bushing.



No. 671



Characteristic Curve No. 671

Furnished with loop for use on chandelier hook or $\frac{3}{4}$ " conduit fitting.

HOLOPHANE LIGHT DIRECTORS FOR GENERAL USE

The No. 671 reflector is similar in construction with a fixture stem of iron conduit terminating in a loop with wire port. The tripod holder is steel and grips the fixture stem at a point to give correct focal position for the lamp. The tripod is locked in position with a special retaining ring making it impossible for the reflector to fall. Standard fixture finish is "Udylite" (cadmium plated).

All of these units are particularly suitable for use in general factory lighting installations where the electric outlets are grouped to conform to the machinery arrangement. They should not be spaced more than $1\frac{1}{4}$ as far apart as the mounting height above work.

SCHEDULE "I" DISCOUNTS

Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship Weight Std. Qt.	Dimensions		Mazda Lamp
						Diameter	Depth	
653*	----	----	\$2.30	10	52	9"	7 $\frac{1}{8}$ "	100†-150
	0936	----	1.00	10	20	3 $\frac{3}{4}$ "	2 $\frac{1}{2}$ "	
654*		6573*	1.30	10	48	9"	5 $\frac{1}{8}$ "	100†-150
	----	----	3.20	10	72	10 $\frac{3}{8}$ "	8 $\frac{1}{2}$ "	
	0936	----	1.00	10	20	3 $\frac{3}{4}$ "	2 $\frac{1}{2}$ "	200
		6575*	2.20	10	62	10 $\frac{3}{8}$ "	6 $\frac{1}{4}$ "	
6531*	----	----	4.35	10	71	9"	9 $\frac{1}{4}$ "	100†-150
	0641	----	3.05	10	23	4 $\frac{1}{2}$ "	4 $\frac{3}{4}$ "	
6533*		6573*	1.30	10	48	9"	5 $\frac{1}{8}$ "	100†-150
	----	----	4.35	10	71	9"	9 $\frac{3}{8}$ "	
	0643	----	3.05	10	23	3 $\frac{3}{4}$ "	4 $\frac{3}{4}$ "	100†-150
		6573*	1.30	10	48	9"	5 $\frac{1}{8}$ "	
6541*	----	----	5.25	10	85	10 $\frac{3}{8}$ "	10 $\frac{5}{8}$ "	200
	0641	----	3.05	10	23	4 $\frac{1}{2}$ "	4 $\frac{3}{4}$ "	
		6575*	2.20	10	62	10 $\frac{3}{8}$ "	6 $\frac{1}{4}$ "	200
6543*	----	----	5.25	10	85	10 $\frac{3}{8}$ "	10 $\frac{3}{4}$ "	
	0643	----	3.05	10	23	3 $\frac{3}{4}$ "	4 $\frac{3}{4}$ "	200
		6575*	2.20	10	62	10 $\frac{3}{8}$ "	6 $\frac{1}{4}$ "	
6583*	----	----	7.70	10	106	11 $\frac{3}{8}$ "	12 $\frac{1}{2}$ "	300
	0644	----	3.85	10	23	3 $\frac{3}{4}$ "	6"	
		6588*	3.85	10	70	11 $\frac{3}{8}$ "	6 $\frac{3}{4}$ "	300
671§	----	----	8.25	5	65	13"	19"	
	0672	----	2.75	5	33	13"	19"	75-100-150-200
		6671§	5.50	5	60	12 $\frac{3}{8}$ "	6 $\frac{1}{4}$ "	

§Standard finish—clear glass.

*Standard finish—velvet finish glass.

†With inside frosted lamp use $\frac{7}{8}$ " socket extension.

Aluminum covers spun permanently over the reflectors can be supplied on any of these numbers at \$3.30 list each additional. Add \$3.85 to list price of No. 671 for Aluminum Cover.

HOLOPHANE REFRACTORS FOR YARD LIGHTING

Holophane Yard Lighting units are heavy duty, outdoor, cast metal fixtures and Holophane double refractor globes in symmetric and asymmetric distributions. The fixture is dust tight, with adjustable socket position for different sizes of lamps or for varying the spread, and terminates in $1\frac{1}{2}$ " female pipe thread connection (except the unit No. 04333). All exposed glass surfaces are smooth and dirt resisting. Write for special bulletin "Lighting Specific for Industrial Yards."



Nos. 04338—04376—04377

Use with lamps up to and including 300 watt in large industrial outdoor locations, requiring either symmetric or asymmetric distributions (see opposite page).



No. 04333

Use with lamps up to and including 500 watt. Made in symmetric distribution only.



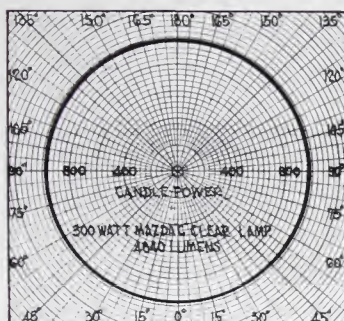
No. 0878

Use this bracket with any of the above units, except No. 04333.

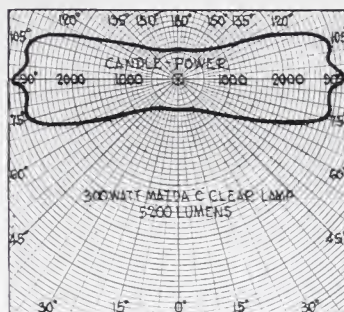
HOLOPHANE REFRACTORS FOR YARD LIGHTING

The symmetric light distribution is for general use where the light is desired equally in all directions. The two way asymmetric distribution is useful where units are mounted between buildings. The fan shaped distribution has special application where units are mounted on the side of buildings or along one side of a road.

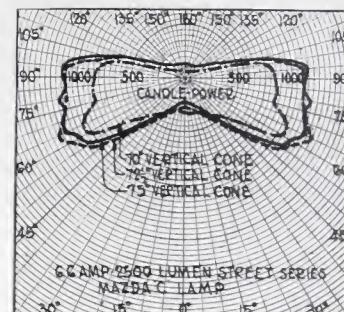
Typical Horizontal and Vertical Distribution Curves of Symmetric and Asymmetric Yard Light Directors.



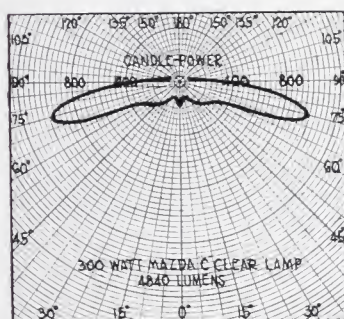
Characteristic horizontal distribution curve of 04338 and 04333 symmetric type



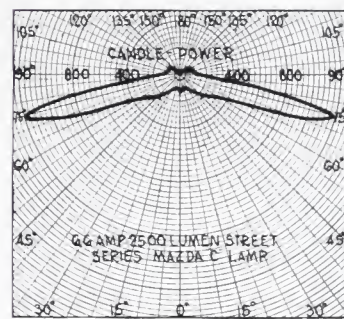
Characteristic horizontal distribution curve of 04376 two way asymmetric type



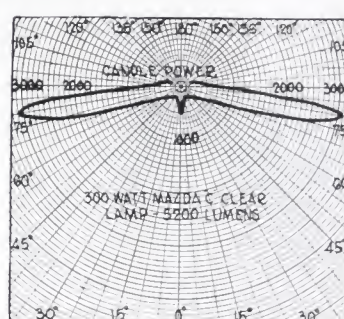
Characteristic horizontal distribution curves of 04377 fan shaped asymmetric type



Characteristic vertical distribution curve of 04338 and 04333 symmetric type



Characteristic vertical distribution curve of 04376 two way asymmetric type



Characteristic vertical distribution curve of 04377 fan shaped asymmetric type

SCHEDULE "R" DISCOUNTS

Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship Weight Std. Qt.	Dimensions		Mazda Lamp
						Diameter	Depth	
04333	----	----	\$33.00	4	450	15 1/8"	22 3/4"	500
	0882	----	19.00	8	225	15 1/8"	14"	
		4333	14.00	8	80	11 3/4"	10"	500
04338	----	----	24.80	4	248	11 5/8"	16"	200†-300
	0881	----	17.30	8	175	11 5/8"	9"	
		4338	7.50	8	75	8 1/2"	7 7/8"	200†-300
04376*	----	----	25.80	4	250	11 5/8"	16"	200†-300
	0881	----	17.30	8	175	11 5/8"	9"	
		4376*	8.50	8	80	8 1/2"	7 7/8"	200†-300
04377†	----	----	26.55	4	255	11 5/8"	16"	200†-300
	0881	----	17.30	8	175	11 5/8"	9"	
		4377†	9.25	8	80	8 1/2"	7 7/8"	200†-300
0878 Bracket	----	----	12.60	8	50	24" Span		

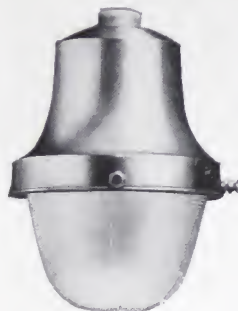
*Two way distribution.

†Fan shaped distribution.

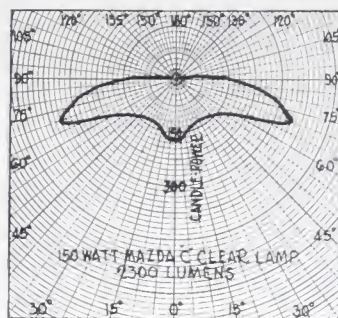
‡Socket adapter required to change from mogul to medium base lamp.

HOLOPHANE WIDE SPREAD LIGHT DIRECTORS

Holophane No. 830, No. 831 and No. 832 are designed to spread the light out uniformly over large areas. (Areas with diameter 6 times the mounting height). The globes are heavy pressed double refractors sealed together dust-tight with smooth inner and outer surfaces to resist dirt accumulation. They fit dirt and weather tight into heavy spun copper fixtures. No. 830 and No. 832 have medium base porcelain sockets. Mount on $\frac{1}{2}$ " male pipe fitting. No. 831 has no socket but screws over existing receptacles which are flush with surface on which the fixture fastens. Write for special "Wide Spread Lighting" Bulletin.



No. 830—No. 832

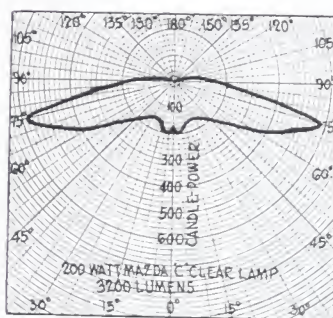


Characteristic Curve
No. 830—No. 831

Use with 75 to 200 watt lamps for all outdoor locations where a wide spread of light is required. (6 times the mounting height above the ground).

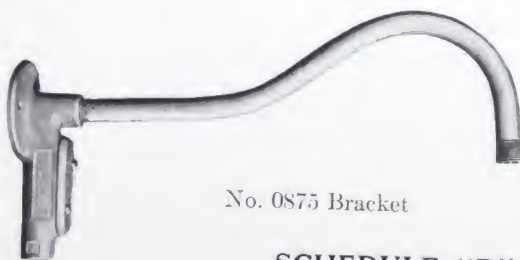


No. 831



Characteristic Curve
No. 832

Use with 75 to 150 watt lamps outdoors for wide spread lighting. (Gasoline Stations).



No. 0875 Bracket

This bracket is designed for mounting flush on the wall or post and takes units No. 830 and 832.

SCHEDULE "R" DISCOUNTS

Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship Weight Std. Qt.	Dimensions		Mazda Lamp
						Diameter	Depth	
830	----	----	\$8.00	20	142	7 $\frac{5}{8}$ "	10"	75†-100†-150
	0891	----	4.50	20	30	6 $\frac{3}{4}$ "	5 $\frac{1}{4}$ "	
832	----	4337	3.50	20	90	6 $\frac{1}{2}$ "	5"	75†-100†-150 200
	0890	----	10.50	10	100	8 $\frac{1}{2}$ "	12 $\frac{3}{4}$ "	
	----	4334	5.50	10	30	7 $\frac{7}{8}$ "	5 $\frac{7}{8}$ "	200 75†-100†-150
	0892	----	5.00	10	65	7 $\frac{1}{2}$ "	6 $\frac{1}{4}$ "	
831	----	----	7.00	20	123	7 $\frac{3}{8}$ "	7 $\frac{1}{8}$ "	75†-100†-150
	0892	----	3.50	20	45	7"	3 $\frac{3}{8}$ "	
0875 Bracket	----	4337	3.50	20	90	6 $\frac{1}{2}$ "	5"	75†-100†-150
	----	----	5.80	10	40	16" Span		

†With 75 watt clear lamp and 100 watt inside frosted lamp use $\frac{7}{8}$ " socket extension.

HOLOPHANE LIGHT DIRECTORS FOR OUTDOOR SUB-STATIONS

These light directors have been scientifically designed specifically for the lighting of outdoor sub-stations. They consist of a Holophane double globe refractor, used in inverted position over the lamp, enclosed in an outer protective globe to withstand weather conditions and mounted on a cast metal fixture body, terminating at the base in a 1½" female pipe threaded connection. The refractors are supplied as listed below for symmetric and asymmetric distribution, depending upon the location and in either type of distribution deliver the maximum beam of light at low angles above the horizontal. These units are usually mounted about 8 feet from the ground, where lamp renewals can be made quickly and without danger and obviously the main light delivered is on the under side of the super structure, the important point to be well lighted. The light is delivered from such an angle that anyone working under the equipment at night will not be subjected to glare or eye-strain. Write for special bulletin on lighting of outdoor sub-stations.



Nos. 043382, 043762, 043772
(Symmetrical) (Asymmetrical)

For horizontal curves see page 27, also invert the vertical curves on the same page for the vertical distribution of these units.

Write for booklet Lighting Specifics for Out-Door Sub-Stations.



No. 0878
Bracket for mounting
Nos. 043382, 043762,
043772

Use with any of the above units.

SCHEDULE "R" DISCOUNTS

Complete Unit	Fixture Only	Refractor Only	Outer Globe Only	List Price Each	Std. Quant.	Ship Weight Std. Qt.	Dimensions		Mazda Lamp
							Diameter	Depth	
043382	0883	----	----	\$39.90	4	226	13⅝"	17½"	200†-300
		----	----	24.50	8	79	13⅝"	8⅜"	
		4338	----	7.50	8	75	8½"	7⅞"	200†-300
			1245	7.90	8	152	12"	12¼"	
043762	0883	----	----	40.90	4	231	13⅝"	17½"	200†-300
		----	----	24.50	8	79	13⅝"	8⅜"	
		4376	----	8.50	8	80	8½"	7⅞"	200†-300
			1245	7.90	8	152	12"	12¼"	
043772	0883	----	----	41.65	4	231	13⅝"	17½"	200†-300
		----	----	24.50	8	79	13⅝"	8⅜"	
		4377	----	9.25	8	80	8½"	7⅞"	200†-300
			1245	7.90	8	152	12"	12¼"	
0878 Bracket	----	----	----	12.60	8	50	24" Span		

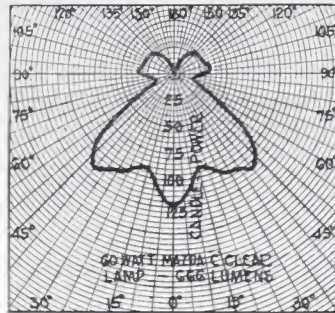
†With 200 Watt Lamp, use Mogul to Medium base adapter.

HOLOPHANE VAPOR-PROOF LIGHT DIRECTORS

These light directors consist of one piece, heavy duty prismatic glass globes with threaded fitters which engage cast aluminum fittings for mounting on $\frac{1}{2}$ " conduit. The globe thus provides a gas-proof chamber for the lamp as well as serving as an extremely efficient lighting unit. These globes can also be used with Crouse-Hinds, Benjamin, V.V., Russell & Stoll, Veco, Taplet and other manufacturers' vapor-proof fittings. This equipment has a broad application in acid plants, paint shops, electro-plating and pickling departments, oil refineries, powder plants, grain elevators, etc.



No. 02208

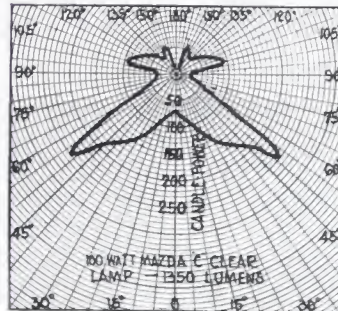


Characteristic Curve No. 02208

Use with maximum 60 watt lamp on spacings not exceeding two times the mounting height.



No. 02328

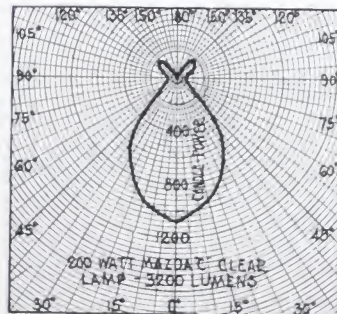


Characteristic Curve No. 02328

Use with maximum 150 watt lamp on spacings not exceeding two and a half times the mounting height.



No. 02338



Characteristic Curve No. 02338

Use with maximum 200 watt lamp on spacings not exceeding the mounting height.

SCHEDULE "I" DISCOUNTS

Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship Weight Std. Qt.	Dimensions		Mazda Lamp
						Diameter	Depth	
02208	----	----	\$7.15	20	115	$6\frac{3}{8}"$	$8\frac{3}{4}"$	40-50-60
	0231	----	4.95	20	35	$3\frac{5}{8}"$	$2\frac{7}{8}"$	
02328	----	2208	2.20	20	75	$6\frac{3}{8}"$	$6\frac{3}{4}"$	40-50-60
	0232	----	10.45	15	113	$7\frac{1}{4}"$	$10\frac{1}{4}"$	75†-100†-150
	2328	----	7.15	15	35	$4\frac{3}{4}"$	$2\frac{7}{8}"$	
02338	----	2328	3.30	15	80	$7\frac{1}{4}"$	$8\frac{1}{4}"$	75†-100†-150
	0233	----	15.40	6	95	$10\frac{3}{8}"$	$13"$	
	2338	----	8.80	6	25	$4\frac{7}{8}"$	$5\frac{3}{8}"$	200
		2338	6.60	6	78	$10\frac{3}{8}"$	$8\frac{3}{8}"$	200

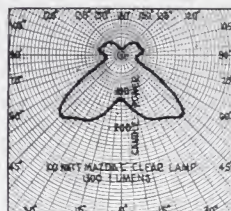
†With 75 watt clear lamp and 100 watt inside frosted lamp use $\frac{7}{8}"$ socket extension.

HOLOPHANE LIGHT DIRECTORS FOR SPECIAL INDUSTRIAL USE

Holophane No. 2370, 2372 and 2376 are similar to No. 2170 (See page 18), 2172 (See page 32) and 2176 (See page 32) except that they have screw type heels instead of heels for set screw holders. No. 02370, 02372 and 02376 are complete units with cast aluminum screw thread fitters for mounting on $\frac{1}{2}$ " conduit. No. 02370-S, 02372-S and 02376-S are complete units with heavy spun copper screw thread fitter for mounting on $\frac{1}{2}$ " conduit. No. 02370-BC, 02372-BC and 02376-BC are complete units with heavy spun copper screw thread fitters for fastening directly on the ears of a 4" round box. All fixtures are supplied with porcelain sockets. Finish dull nickel.



No. 02370-02372-02376

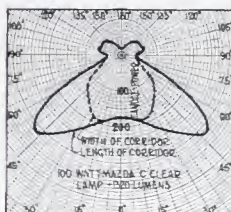


Characteristic
Curve No. 2370

These units with cast aluminum fitters are for use outdoors in such locations as railroad platforms.



No. 02370-S, 02372-S, 02376-S

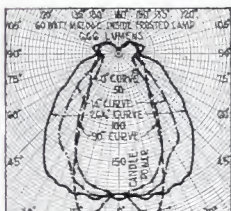


Characteristic
Curve No. 2372

These units with spun copper fitters are for use indoors for general illumination.



No. 02370-BC, 02372-BC-
02376-BC



Characteristic
Curve No. 2376

These units with box cover fitters are for use indoors where the headroom is limited as in parking garages.

SCHEDULE "I" DISCOUNTS

Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship Weight Std. Qt.	Dimensions		Mazda Lamp
						Diameter	Depth	
02370	----	----	\$9.35	8	68	9 $\frac{7}{8}$ "	10 $\frac{1}{4}$ "	100†-150
	0234	----	5.50	8	18	4 $\frac{1}{4}$ "	3 $\frac{1}{8}$ "	
02372	----	2370	3.85	8	50	9 $\frac{7}{8}$ "	7 $\frac{3}{4}$ "	100†-150
	0234	----	9.35	8	68	9 $\frac{7}{8}$ "	10"	100†-150
02376	----	2372	5.50	8	18	4 $\frac{1}{4}$ "	3 $\frac{1}{8}$ "	
	0234	----	3.85	8	50	9 $\frac{7}{8}$ "	7 $\frac{3}{8}$ "	100†-150
02370-S	----	----	8.80	8	68	9 $\frac{7}{8}$ "	9 $\frac{1}{2}$ "	100†-150
	0362	----	5.50	8	18	4 $\frac{1}{4}$ "	3 $\frac{1}{8}$ "	
02372-S	----	2376	3.30	8	50	9 $\frac{7}{8}$ "	7"	100†-150
	0362	----	6.60	8	70	9 $\frac{7}{8}$ "	10 $\frac{1}{4}$ "	100†-150
02376-S	----	----	2.75	8	20	4 $\frac{1}{8}$ "	3 $\frac{1}{8}$ "	
	0362	----	3.85	8	50	9 $\frac{7}{8}$ "	7 $\frac{3}{4}$ "	100†-150
02370-BC	----	2370	6.05	8	70	9 $\frac{7}{8}$ "	10"	100†-150
	0363	----	2.75	8	20	4 $\frac{1}{8}$ "	3 $\frac{1}{8}$ "	
02372-BC	----	2376	3.30	8	50	9 $\frac{7}{8}$ "	7"	100†-150
	0363	----	5.35	8	65	9 $\frac{7}{8}$ "	9 $\frac{1}{8}$ "	100†-150
02376-BC	----	----	1.50	8	15	4 $\frac{1}{4}$ "	2"	
	0363	----	3.85	8	50	9 $\frac{7}{8}$ "	7 $\frac{3}{4}$ "	100†-150
02370-BC	----	2370	5.35	8	65	9 $\frac{7}{8}$ "	8 $\frac{3}{4}$ "	100†-150
	0363	----	1.50	8	15	4 $\frac{1}{4}$ "	2"	
02372-BC	----	2372	3.85	8	50	9 $\frac{7}{8}$ "	7 $\frac{3}{8}$ "	100†-150
	0363	----	4.80	8	65	9 $\frac{7}{8}$ "	7 $\frac{1}{8}$ "	100†-150
02376-BC	----	----	1.50	8	15	4 $\frac{1}{4}$ "	2"	
	0363	2376	3.30	8	50	9 $\frac{7}{8}$ "	7"	100†-150

† With inside frosted lamp use $\frac{7}{8}$ " socket extension.

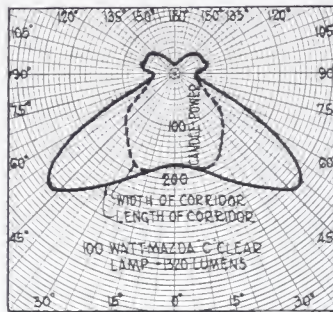
Aluminum covers spun on any of the above reflectors at an additional charge of \$3.30 list.

HOLOPHANE ASYMMETRIC (AISLE LIGHTING) LIGHT DIRECTORS

These light directors have been scientifically designed to give asymmetric light distribution to meet certain specific applications. The resulting light pattern on the work conforms to the contour of the area to be lighted, and for this reason the effective illumination from these units is far greater than can be obtained from any symmetric lighting equipment in such situations. C-2172 is specifically intended for lighting of corridors, and similar places, but has a broad application for industrial lighting as well. (Also see No. 02372, page 31.) No. 02176 is designed for lighting of library book stacks, stock bins, and similar places with 60 watt lamps; will be furnished with 40 or 50 watt lamp position on special order. Fixture designed to attach to 3 $\frac{1}{4}$ "-4" outlet box and Crouse-Hinds P.M. condulets. (Also see No. 02376, page 31.)



No. C-2172

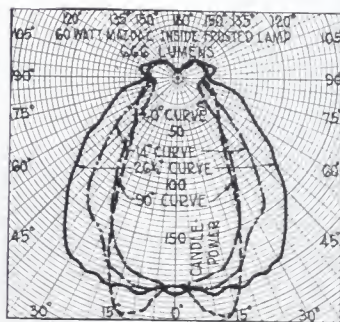


Characteristic Curves
No. C-2172

Use with 100 and 150 watt lamps on spacings not exceeding two and a half times the mounting height. For corridors and industrial aisles.



No. 02176



Characteristic Curves
No. 02176

Use with 60 watt lamps on spacings not exceeding 7 feet. Mount 7 feet from the floor. For library book stacks, stock bins and similar places.

SCHEDULE "R" DISCOUNTS

Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship Weight Std. Qt.	Dimensions		Mazda Lamp
						Diameter	Depth	
C-2172	----	----	\$8.00	8	69	9 $\frac{7}{8}$ "	12"	100†-150
	0393	----	3.50	8	20	6"	4 $\frac{5}{8}$ "	
02176	----	2172	4.50	8	50	9 $\frac{7}{8}$ "	7 $\frac{5}{8}$ "	100†-150
	0366	----	6.50	8	68	9 $\frac{7}{8}$ "	6 $\frac{3}{4}$ "	
	----	2176	2.25	8	18	5 $\frac{3}{8}$ "	1"	60
			4.25	8	50	9 $\frac{7}{8}$ "	6 $\frac{1}{2}$ "	60

†With inside frosted lamp use $\frac{7}{8}$ " socket extension.

Above reflectors available with threaded fitter see page 31.

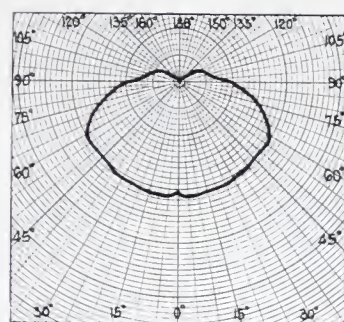
HOLOPHANE LIGHT DIRECTORS FOR CORRIDORS AND LOW CEILINGS

These Holophane Light Directors are made of heavy pressed prismatic glass designed to give broad light distributions for comparatively low mounting. The 1011, 1211, 1411 series are scientifically designed for high illumination efficiency whereas in the 8420, 8422, 8424 series some sacrifice in efficiency has been made to secure the decorative and sparkling effect of the heavy diamond shaped prisms. The fixtures are substantially constructed of heavy gauge spun brass hinged to facilitate relamping. BESIDE THE MAIN SOCKET IS AN EXTRA INTERMEDIATE BASE SOCKET FOR 10 WATT NIGHT LIGHT SERVICE ON SEPARATE CIRCUIT. Standard finish is statuary bronze; brush brass will be furnished on special order without extra charge. Wire is NOT included. In corridors, hallways, under and over mezzanine floors or in any low ceiling situation these units harmonize with the architectural requirements.

For sensibly uniform illumination the spacing should not exceed twice the mounting height.

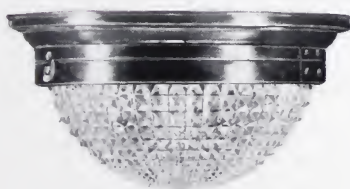


C-1011, C-1211, C-1411



Characteristic Curve
No. C-1011, C-1211, C-1411

Use in corridors, under mezzanines and other low ceiling locations.



C-8420, C-8422, C-8424

Ornamental

Use in corridors, under mezzanines and other low ceiling locations, where ornamental effect is more important than scientific distribution and efficiency.

SCHEDULE "R" DISCOUNTS

Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship Weight Std. Qt.	Dimensions			Mazda Lamp
						Dia. Over-All	Dia. under Flange	Depth	
C-1011	----	----	\$16.25	5	100	13"		7 1/8"	100 I.F.
	0310	----	14.00	10	28	13"		2 5/8"	
C-1211	----	1011	2.25	10	72	10"	9 1/2"	4 3/4"	100 I.F.
	0312	----	21.65	3	85	15 1/2"		8 5/8"	150
		1211	17.50	3	25	15 1/2"		3 1/8"	
C-1411	----	----	4.15	3	60	12"	11 1/2"	5 3/4"	150
	0314	----	35.00	3	90	18"		10 1/8"	200
		1411	26.25	3	25	18"		3 5/8"	
C-8420	----	----	8.75	3	65	14"	13 1/2"	6 3/4"	200
	0310	----	16.25	10	110	13"		6 3/8"	60
		8420	14.00	10	29	13"		2 5/8"	
C-8422	----	----	2.25	10	81	10"	9 1/2"	4"	60
	0312	----	21.65	10	107	15 1/2"		7 5/8"	100 I.F.
		8422	17.50	10	25	15 1/2"		3 1/8"	
C-8424	----	----	4.15	10	82	12"	11 1/2"	4 3/4"	100 I.F.
	0314	----	35.00	3	95	18"		9"	150
		8424	26.25	3	25	18"		3 5/8"	
			8.75	3	70	14"	13 1/2"	5 5/8"	150

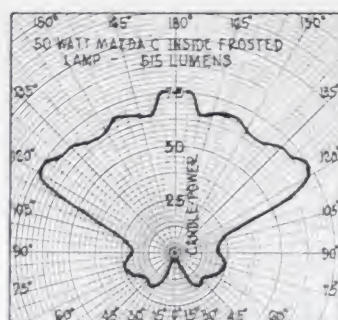
Above fixtures all have supplementary intermediate base socket for 10 watt night light service on separate circuit.

HOLOPHANE BOUNDARY AND OBSTACLE LIGHTS FOR AIRPORTS

Holophane Aviation Boundary and Obstacle Lighting globes have been scientifically designed, with the help of government engineers, specifically for airport lighting. They are standard for the U.S. Department of Commerce. The light distribution is such as to provide clear visibility at great distance. The only exterior prisms are reflecting vertical prisms which resist dirt and dust accumulation. These globes are manufactured in crystal, green, ruby and amber glass and are supplied with and without heavy duty cast bronze fittings, as listed below. Write for special bulletin.



No. 02203

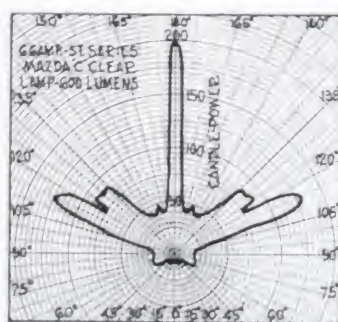


Characteristic Curve No. 02203

Used for boundary lighting with 50 watt A-21 lamp on emergency fields. The 25 watt A-19 lamp, with $\frac{7}{8}$ " socket extension, may be used where portable generating set is employed.



No. 02323



Characteristic Curve No. 02323

Used for boundary and obstacle lighting with 600 or 1000 lumen S-24 $\frac{1}{2}$ lamp or 150 watt PS 25 lamp. Series lamps require special socket position.

SCHEDULE "I" DISCOUNTS

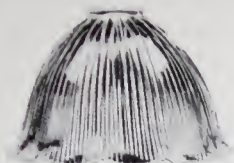
Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship Weight Std. Qt.	Dimensions		Mazda Lamp
						Diameter	Depth	
02203-Crystal	----	-----	\$7.70	20	139	6 $\frac{1}{2}$ "	9 $\frac{1}{2}$ "	25†-50
	0228	-----	4.95	20	56	3 $\frac{1}{2}$ "	2 $\frac{3}{4}$ "	
02203-Green	----	2203-Crystal	2.75	20	83	6 $\frac{1}{2}$ "	7 $\frac{5}{8}$ "	25†-50
	0228	-----	8.80	20	139	6 $\frac{1}{2}$ "	9 $\frac{1}{2}$ "	25†-50
02203-Ruby	----	2203-Green	4.95	20	56	3 $\frac{1}{2}$ "	2 $\frac{3}{4}$ "	25†-50
	0228	-----	3.85	20	83	6 $\frac{1}{2}$ "	7 $\frac{5}{8}$ "	
02203-Amber	----	2203-Ruby	9.35	20	139	6 $\frac{1}{2}$ "	9 $\frac{1}{2}$ "	25†-50
	0228	-----	4.95	20	56	3 $\frac{1}{2}$ "	2 $\frac{3}{4}$ "	
02323-Crystal	----	2203-Amber	4.40	20	83	6 $\frac{1}{2}$ "	7 $\frac{5}{8}$ "	25†-50
	0229	-----	9.35	20	121	6 $\frac{1}{2}$ "	9 $\frac{1}{2}$ "	
02323-Green	----	2323-Crystal	4.95	20	40	3 $\frac{1}{2}$ "	2 $\frac{3}{4}$ "	150W-600-1000-Lumens
	0229	-----	9.35	8	121	8 $\frac{1}{2}$ "	16 $\frac{3}{8}$ "	
02323-Ruby	----	2323-Green	5.50	8	40	4 $\frac{1}{4}$ "	7 $\frac{1}{2}$ "	150W-600-1000-Lumens
	0229	-----	11.00	8	76	8 $\frac{1}{2}$ "	9 $\frac{1}{2}$ "	
02323-Amber	----	2323-Ruby	5.50	8	40	4 $\frac{1}{4}$ "	7 $\frac{1}{2}$ "	150W-600-1000-Lumens
	0229	-----	11.50	8	121	8 $\frac{1}{2}$ "	16 $\frac{3}{8}$ "	
	----	2323-Amber	5.50	8	40	4 $\frac{1}{4}$ "	7 $\frac{1}{2}$ "	150W-600-1000-Lumens
	0229	-----	6.00	8	76	8 $\frac{1}{2}$ "	9 $\frac{1}{2}$ "	

†Use $\frac{7}{8}$ " socket extension with 25 watt lamp.

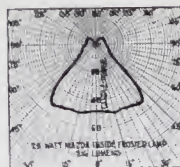
FOR SERIES
LAMPS WRITE
FOR SPECIAL
PRICE

HOLOPHANE REFLECTORS—DIRECT LIGHTING

Xtra-ficiency Reflectors For Mazda "B" Lamps & Inside Frosted Mazda "C" Lamps



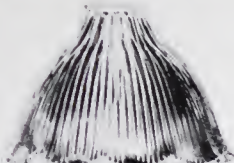
Extension Type XE



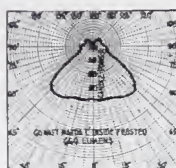
Distribution curve of XE Type

EXTENSIVE

Use where the spacing is not more than twice the mounting height above the working plane.



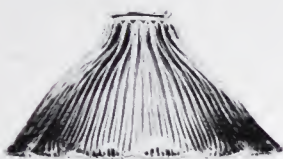
Intensive Type XI



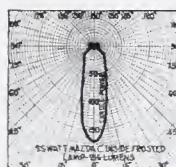
Distribution curve of XI Type

INTENSIVE

Use where the spacing is not more than $1\frac{1}{4}$ times the mounting height above the working plane.



Focusing Type XF

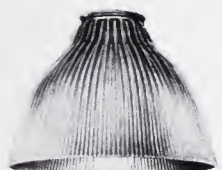


Distribution curve of XF Type

FOCUSING

Use where the spacing is not more than $\frac{3}{4}$ times the mounting height above the working plane.

Super-ficiency Reflectors For Mazda "C" Lamps



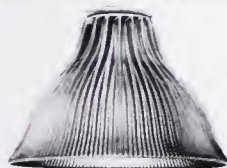
CSE Type
Super-Ficiency Extensive



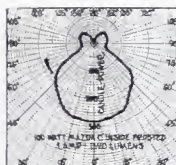
Distribution curve of CSE Type

EXTENSIVE

Use where the spacing is not more than twice the mounting height above the working plane.



CSI Type
Super-Ficiency Intensive



Distribution curve of CSI Type

INTENSIVE

Use where the spacing is not more than $1\frac{1}{2}$ times the mounting height above the working plane.

SCHEDULE "R" DISCOUNTS

Glass Only	List Price Each	Std. Quant.	Ship Weight Std. Qt.	Dimensions			Mazda Lamp
				Diameter	Depth	Holder	
XE- 25	\$0.90	20	33	6 $\frac{1}{8}$ "	4 $\frac{1}{8}$ "	2 $\frac{1}{4}$ "-O	25
XE- 40	1.05	10	20	6 $\frac{7}{8}$ "	4 $\frac{3}{4}$ "	2 $\frac{1}{4}$ "-O	40
XE- 60	1.15	10	25	7 $\frac{5}{8}$ "	5"	2 $\frac{1}{4}$ "-O	50-60
XI- 25	.90	20	33	6 $\frac{3}{4}$ "	4 $\frac{1}{8}$ "	2 $\frac{1}{4}$ "-O	25
XI- 40	1.05	10	24	7 $\frac{3}{8}$ "	4 $\frac{5}{8}$ "	2 $\frac{1}{4}$ "-O	40
XI- 60	1.15	10	31	7 $\frac{3}{4}$ "	5"	2 $\frac{1}{4}$ "-O	50-60
XF- 25	.90	20	33	7"	4"	2 $\frac{1}{4}$ "-O	25
XF- 40	1.05	10	24	7 $\frac{3}{4}$ "	4 $\frac{3}{8}$ "	2 $\frac{1}{4}$ "-O	40
XF- 60	1.15	10	31	8 $\frac{1}{4}$ "	4 $\frac{3}{4}$ "	2 $\frac{1}{4}$ "-O	50-60
CSE- 75	1.40	10	36	7 $\frac{1}{2}$ "	5 $\frac{7}{8}$ "	2 $\frac{1}{4}$ "-O	75
CSE-100	1.75	10	40	8 $\frac{1}{8}$ "	6"	2 $\frac{1}{4}$ "-H	100†-150
CSE-200	3.40	10	64	9 $\frac{3}{4}$ "	7 $\frac{3}{8}$ "	3 $\frac{1}{4}$ "-A	200
CSI- 75	1.40	10	36	8"	5 $\frac{7}{8}$ "	2 $\frac{1}{4}$ "-O	75
CSI-100	1.75	10	40	8 $\frac{5}{8}$ "	6 $\frac{1}{8}$ "	2 $\frac{1}{4}$ "-H	100†-150
CSI-200	3.40	10	64	10 $\frac{1}{8}$ "	7 $\frac{3}{8}$ "	3 $\frac{1}{4}$ "-A	200

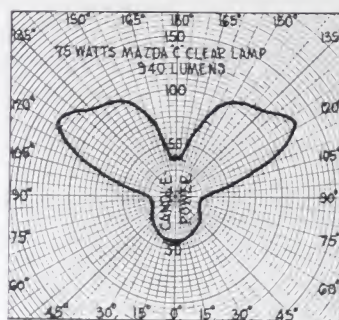
Regularly furnished clear. For Velvet Finish add 10% to the list price.
It is imperative that the proper holders be used with these light directors.
†With 100 watt inside frosted lamp use $\frac{7}{8}$ " socket extension.

HOLOPHANE UNITS FOR HOSPITAL LIGHTING

Holophane Twilites provide two levels of illumination, one for night light service and the other for reading or medical examination. Nos. C-7326 and S-7326 are respectively ceiling and suspension type with one central socket for 75 watt lamp and one auxiliary or night light socket for 2 or 4 candlepower lamp on a separate circuit. Nos. C-7346 and S-7346 are respectively ceiling and suspension type for 75 or 100 watt central light and 2 or 4 candlepower dual lights for night service. Fixtures and glass are absolutely smooth exterior, stream line design to resist dust and dirt accumulation. The standard finish is Duco Hospital gray (special finishes quoted on request.)



No. C-7326, C-7346

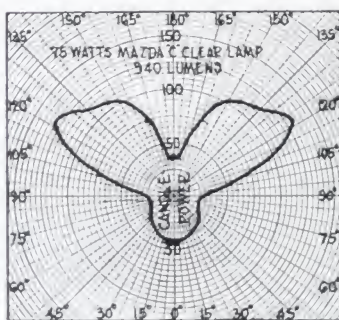


Characteristic Curve

For use in Hospital Wards
and Private rooms.



No. S-7326, S-7346



Characteristic Curve

For use in Hospital Wards
and Private rooms.

SCHEDULE "R" DISCOUNTS

Complete Unit	Fixture No.	Glass No.	List Price Each	Std. Quant.	Ship Weight Std. Qt.	Dimensions		Mazda Lamp
						Diameter	Depth	
C-7326	0403	----	\$17.50	1	26	12"	16 $\frac{7}{8}$ "	1-75 or 100†
		----	8.50	1	30	7"	5 $\frac{3}{4}$ "	1- 4 c.p. lamp
		7326	9.00	1	14	12"	11 $\frac{1}{4}$ "	1-75 or 100†
S-7326	0384	----	20.00	1	29	12"	30"	1- 4 c.p. lamp
		----	11.00	1	15	5"	17 $\frac{1}{4}$ "	1-75 or 100†
		7326	9.00	1	14	12"	11 $\frac{1}{4}$ "	1-75 or 100†
C-7346	0404	----	24.00	1	37	14"	17"	1-75 or 100†
		----	11.00	1	15	8 $\frac{1}{4}$ "	7 $\frac{1}{8}$ "	2- 4 c.p. lamp
		7346	13.00	1	24	14"	12 $\frac{3}{8}$ "	1-75 or 100†
S-7346	0385	----	28.00	1	40	14"	30"	2- 4 c.p. lamp
		----	15.00	1	18	7 $\frac{1}{4}$ "	17 $\frac{1}{4}$ "	1-75 or 100†
		7346	13.00	1	24	14"	12 $\frac{3}{8}$ "	2- 4 c.p. lamp

†Use inside frosted lamp.

HOLOPHANE SPECIFIC FOR MAJOR SURGERIES

MULTIPLE CONTROL LENS SYSTEMS FOR OPERATING ROOMS

[Write for Special "Hospital Lighting" Bulletin]

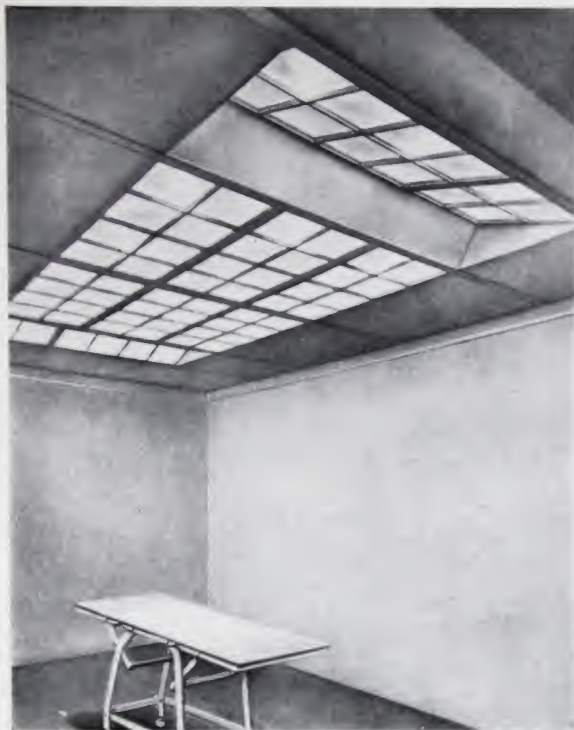


Illustration of Holophane No. 18 M.C.L. System
for Major Surgeries

ADVANTAGES:—

1. Horizontal illumination 1200 foot-candles average on operating area.
2. General illumination of the Operating Room so that the brightness of the surroundings is about the same as the interior of the incision. (The seeing conditions in "looking up" do not change).
3. The direction of the light may be varied without moving the fixture.
4. Adequate diffusion and absence of harmful shadows.
5. High vertical illumination.
6. Glareless, comfortable light.
7. Multiple lamping (some devices put only one lamp between life and death).
8. Reasonable cost of installation, operation and maintenance.
9. All enclosed, heat and dirt-proof.

Specification:

Each lens, lamp and reflector is mounted in the complete multiple lens system in definite and accurate position with relation to each other and the operating area on the surgery table. This method insures the placing of a high intensity, shadowless spot of light on the operating area, without the discomfort of glare or excessive heat.

Self-contained unit consisting of all metal dirt-proof housing; top finished white inside, hospital gray Duco outside, sides and sash given one primary coat; complete with sockets, holders, reflectors, lenses and wired in separate circuits collected in junction box ready for connection to power supply. It is shipped knocked down in such a way as to make assembly and erection easy. It is usually installed flush in a furred ceiling but may be mounted exposed on a concrete ceiling if so desired.

SCHEDULE "I" DISCOUNTS

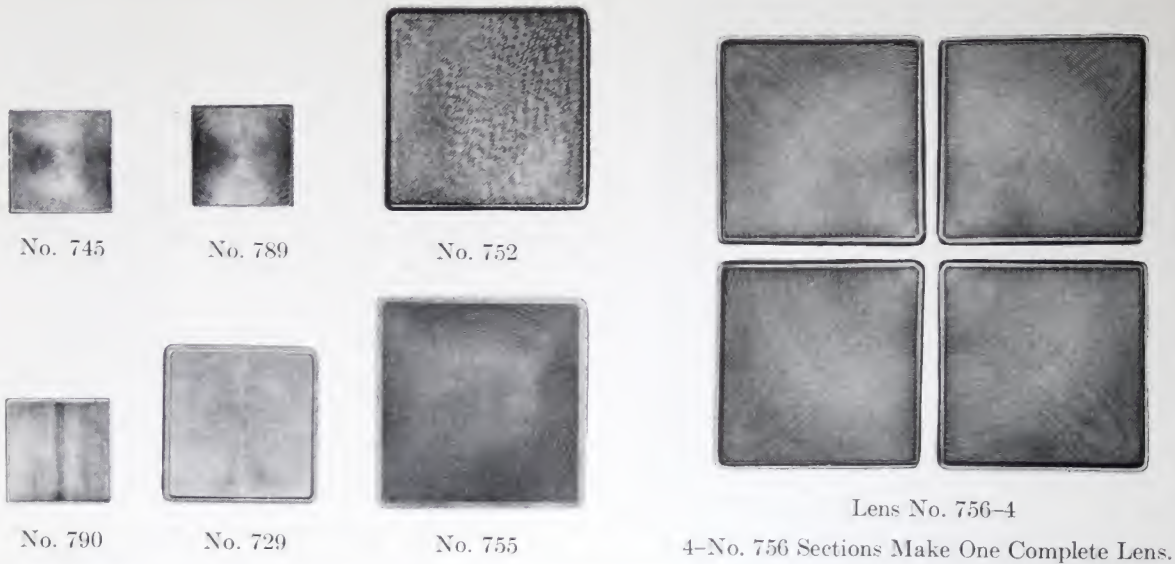
Unit No.	List Price Each	Standard Quantity	Dimensions			Mazda Lamp*
			Length	Width	Depth	
15-M.C.L.	\$935.00	1	11'-6 $\frac{1}{8}$ "	6'-6 $\frac{1}{2}$ "	1'-10 $\frac{1}{2}$ "	15-150W.
18-M.C.L.	990.00	1	13'-7 $\frac{3}{8}$ "	6'-6 $\frac{1}{2}$ "	1'-10 $\frac{1}{2}$ "	18-150W.
21-M.C.L.	1155.00	1	15'-7 $\frac{7}{8}$ "	6'-6 $\frac{1}{2}$ "	1'-10 $\frac{1}{2}$ "	21-150W.

*200 watt lamps may be used over the tilted end lenses if higher vertical illumination is desired, but this must be so stated when ordering so that the necessary changes in socket positions may be made.

HOLOPHANE LIGHT CONTROL LENSES

Description:

These devices are refracting lenses for use in Holophane Planned Lighting installations designed by the Holophane Engineering Department. Submit building plans for specific recommendations.



Use: Location	Lens						
Amusement Parks.....	All						
Art Galleries.....	---	---	---	752	---	---	---
Blackboards.....	---	---	790	---	---	---	---
Bowling Alleys.....	---	---	---	752	755	---	---
Cove Lighting.....	745	789	---	729	---	---	---
Flush Wall Lights.....	---	---	790	---	---	---	---
Footlights.....	745	789	790	729	---	---	---
Gymnasiums.....	---	---	---	---	---	755	756
Handball Courts.....	745	---	790	---	---	755	---
Hospitals:	Any						
Operating Rooms.....	---	---	---	752	755	756	---
Delivery Rooms.....	745	---	---	---	---	756	---
Interior Bulletin Boards.....	---	---	790	---	---	---	---
Miscellaneous:							
Oil Pits (Gas stations).....	745	---	---	---	755	---	---
Paintings.....	---	---	790	752	---	---	---
Photograph Racks.....	---	---	790	---	755	---	---
Show Windows.....	745	789	790	729	752	755	---
Sky-lights.....	---	---	---	752	---	---	---
Spectacular Lighting.....	All						
Swimming Pools.....	---	---	---	---	---	755	---
Wall Cases.....	745	789	790	729	---	---	---

Reflectors for use with lenses

Lens	For Symmetrical Distribution										For Asymmetrical Distribution		
745	XE-60	*2109	*2119	---	---	---	---	---	---	*BUB	*ACC	--	--
789	XE-60	*2109	*2119	---	---	---	---	---	---	*BUB	*ACC	--	--
790	XE-60	*2109	*2119	---	---	---	---	---	---	*BUB	*ACC	--	--
729	XE-60	*2109	*2119	*2129	*2139	---	---	---	---	*BUB	*ACC	--	--
752	---	---	---	---	---	6541	6543	6583	691	---	---	--	--
755	---	---	*2119	*2129	*2139	---	---	---	---	*BUB	---	981	983
756	---	---	---	*2129	*2139	---	---	---	691	*BUB	---	963	983

General Note: Write for price data on these reflectors.

HOLOPHONE LIGHT CONTROL LENSES

Engineering Notes:

Lens No.	Mazda Lamp	Side towards lamp	Spacing for continuous use	
			Minimum	Maximum
745	25-150	Smooth Side	6 $\frac{5}{8}$ " O.C.	13 $\frac{1}{2}$ " O.C.
789	25-150	Smooth Side	6 $\frac{5}{8}$ " O.C.	13 $\frac{1}{2}$ " O.C.
790	25-150	Smooth Side of 789 member	6 $\frac{5}{8}$ " O.C.	24" O.C.
729	25-200	Smooth Side	8 $\frac{3}{4}$ " O.C.	8 $\frac{3}{4}$ " O.C.
752	Any	Prism Side	12 $\frac{1}{8}$ " O.C.	12 $\frac{1}{8}$ " O.C.
755	Any	Smooth Side	12 $\frac{1}{8}$ " O.C.	24" O.C.
756	Any	Smooth Side	12 $\frac{1}{8}$ " O.C.	12 $\frac{1}{8}$ " O.C.

O.C.—On Centers.

Optical Characteristics:

Lens No.	Kind of Beam	Position of lamp filament			
		For Symmetrical Beam		For Asymmetrical Beam	
		Short Focus	Long Focus	Maximum Offset at	
				Short Focus	Long Focus
745	Variable and diffused	*	23 $\frac{1}{4}$ "	7 $\frac{1}{8}$ "	11 $\frac{1}{4}$ "
789	Wide and diffused	21 $\frac{1}{8}$ "	21 $\frac{1}{8}$ "	7 $\frac{1}{8}$ "	7 $\frac{1}{8}$ "
790	Spreads light 22 $\frac{1}{2}$ ° each side-lens axis.	21 $\frac{1}{8}$ "	21 $\frac{1}{8}$ "	7 $\frac{1}{8}$ "	7 $\frac{1}{8}$ "
729	Comparatively narrow and sharp	*	4"	7 $\frac{1}{8}$ "	13 $\frac{1}{4}$ "
752	Wide, diffused and tilted	Write for information			
755	Variable from sharp and narrow to broad	25 $\frac{1}{8}$ "	51 $\frac{1}{2}$ "	11 $\frac{1}{4}$ "	23 $\frac{1}{8}$ "
756-4	Diffused beam, medium spread	55 $\frac{1}{8}$ "	113 $\frac{1}{4}$ "	23 $\frac{1}{8}$ "	5"

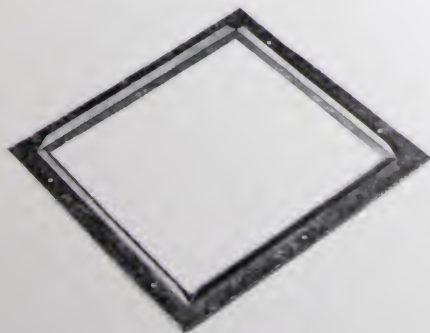
*As close to Lens as Lamp permits leaving a necessary air gap.

SCHEDULE "I" DISCOUNTS

Lens No.	List † Price Each, Clear	Standard Quantity	Ship Weight Std. Pkg.	Dimensions In Inches	Mazda Lamp
745-V.F.	\$1.80	100	85	6 $\frac{1}{2}$ " Square	25-150
789-V.F.	1.80	100	85	6 $\frac{1}{2}$ " "	25-150
*790-V.F.	3.60	50	85	6 $\frac{1}{2}$ " "	25-150
729-V.F.	2.40	50	115	8 $\frac{1}{2}$ " "	25-200
752-V.F.	3.60	25	100	12" "	25-500
755-V.F.	3.60	25	100	12" "	25-500
756-V.F.	3.60	24	100	12" "	Any

*No. 790-V.F. is a double lens.

†Clear glass furnished on special order—deduct 10% from list price.



Ceiling Flange

CEILING FLANGES FOR USE WITH LENSES IN WOOD, PLASTER OR COMPOSITION CEILINGS

Lens No.	List Price Each	Schedule	Std. Quant.
745-F	\$1.35	I	100
789-F	1.35	I	100
790-F	1.35	I	50
729-F	1.50	I	50
752-F	1.80	I	25
755-F	1.80	I	25

HOLOPHANE LIGHT DIRECTORS FOR RAILROAD LIGHTING

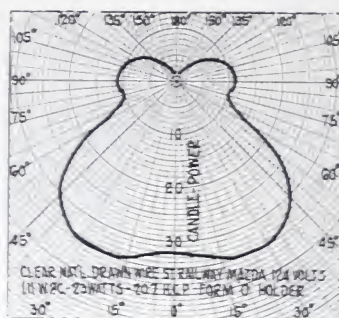
These light directors have been designed to meet the special requirements of railway car lighting and to give proper light distribution when used with fixtures and lamps of railway car lighting type.

The No. 18221 should be used on half deck lighting and Nos. 18226 and 18246 for center deck lighting. The Nos. 18102, 18134 and 18136 were especially designed for electric street car lighting systems.

Special lighting recommendations employing these reflectors will be sent on request made to the Holophane Engineering Department.



Nos. 18102, 18134 and 18136

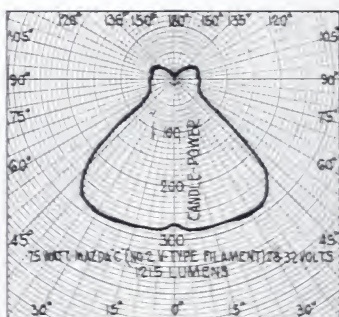


Distribution curve of
No. 18134

Use as instructed above



Nos. 18221, 18226 and 18246



Distribution curve of
No. 18226

Use as instructed above

SCHEDULE "R" DISCOUNTS

Glass Only	List Price Each	Std Quant.	Ship Weight Std. Qt.	Dimensions			Mazda Lamp
				Diameter	Depth	Holder	
18102	\$1.50	20	72	8 1/4"	5 3/4"	2 1/4"	94
18134	1.05	40	80	7"	4 1/2"	2 1/4"	23-36
18136	1.15	30	70	7 1/8"	5 1/8"	2 1/4"	56
18221	1.00	30	68	6 1/4"	4 1/2"	2 1/4"	25
18226	2.60	20	91	8 3/4"	6 1/2"	2 1/4"	50
18246	4.45	8	67	10 3/8"	7"	4 1/2"	50

For Velvet Finish add 10% to above list prices.

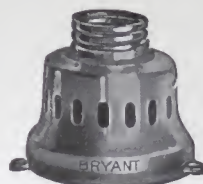
ACCESSORIES FOR HOLOPHANE REFLECTORS AND UNITS



Form O Uno No. 502
and Uno 506 Holder



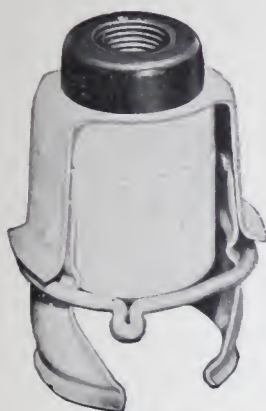
Appleton No. 7319 Holder



Bryant No. 443 and 444



Form H Uno No. 504 Holder



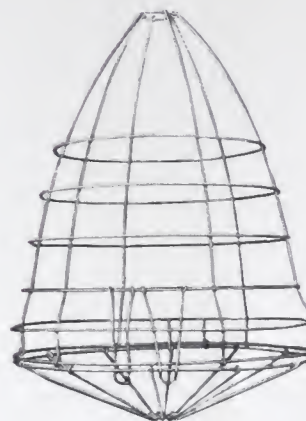
Holder HDH



Form A Holder



P and S
No. 119
O-Holder



Wire Guard

It is imperative that proper holders be used with Holophane Reflectors.

Holo. No.	List Price Each	Standard Quantity	Schedule	Diam. in Inches	Position
†HDH	\$1.25	30	I	2¼	H
UNO-502	.25	50	R	2¼	O
UNO-504	.35	50	R	2¼	H
UNO-506	.50	50	R	3¼	O
3¼-A	.75	30	R	3¼	A
*Appleton No. 7319	.60	50	R	2¼	H
*Bryant 444	.60	50	R	2¼	H
†Bryant 443	.60	50	R	2¼	O
Wire Guard for 622	3.30	5	I	.....	.....
Wire Guard for 671 671AL-681AL-652	3.85	5	I	.....	.....
Wire Guard for 691-AL	4.40	5	I	.....	.....
P & S No. 119	.30	50	R	2¼	O

*Appleton No. 7319 and Bryant No. 444 are 2¼ Form H holders for use on porcelain sockets.

†HDH price includes porcelain socket.

†Bryant No. 443 is Form O holder for porcelain socket.

PROMINENT USERS OF HOLOPHANE EQUIPMENT

A Few Prominent Users of Holophane Include the Following:

SHOW WINDOWS

Albert Steiger Company, Holyoke, Mass.
Berryman Department Store, Charleroi, Pa.
C. J. Sherer Company, Worcester, Mass.
Carey Stores, New York City.
Chandler Auto Sales, Milwaukee, Wis.
Chrysler Auto Show Room, Milwaukee, Wis.
Dodge Brothers Motor Company, Milwaukee, Wis.
Dohrman Commercial Company, Pasadena, Cal.
Duttee Flint Company, Providence, R. I.
F. L. Lazarus Company, Columbus, Ohio.
Famous & Barr Company, St. Louis, Mo.
Feilbleman's Store, Shreveport, La.
G. Fox & Company, Hartford, Conn.
Gimbel Brothers.
Gladding Dry Goods Company, Providence, R. I.
Globe Department Store, Waukegan, Ill.
Hudson Motor Car Company, New York City.
Jackson & Moyer Company, Philadelphia, Pa.
Kitay Building, Paterson, N. J.
Kohler Company, Chicago, Ill.
Ohio Buick Company, Cleveland, Ohio.
Packard Motor Company, Chicago, Ill.
Public Service Company of New Hampshire,
Manchester, N. H.
Rogers Peet Company, New York City.
S. Marcus & Company, Worcester, Mass.
Seruggs-Vandervoort-Barney Co., St. Louis, Mo.
The May Company, Los Angeles, Cal.
The Outlet Company, Providence, R. I.
Union Store, Columbus, Ohio.
Walk-over Shoe Company.
Warren Nash Motor Car Co., New York City.
White House, San Francisco, Cal.

STORES

American Wholesale Corp., Baltimore, Md.
Brownie Drug Company, Detroit, Mich.
Browning King Company, Milwaukee, Wis.
Buick Show Room, Atlanta, Ga.
Cunningham Drug Company, Detroit, Mich.
Economy Drug Company, Michigan.
Fisher Furniture Company, Milwaukee, Wis.
Gotham Hosiery Store, New York City.
H. W. Tyas Company, Fawtucket, R. I.
J. L. Hudson Department Store, Detroit, Mich.
Jenny Wren Self Service Stores, California.
Konner Company, Paterson, N. J.
Leo Wise, Cincinnati, Ohio.
Liggett Drug Stores.
Marshall Drug Stores, Cleveland, Ohio.
Mullin's Department Store, Wilmington, Del.
Piggly Wiggly Stores.
Regal Shoe Stores.
Schulte Cigar Stores.
Standard Drug Stores, Cleveland, Ohio.
Starck Department Store, Canton, Ohio.
Stetson Shoe Shops.
United Cigar Stores.
Willys-Overland Company, Detroit, Mich.

OFFICES

American Trust Company, Boston, Mass.
Army & Navy Building, Washington, D. C.
Atlas Bank, Cleveland, Ohio.
Beacon Trust Company Building, Boston, Mass.
Berkshire Life Insurance Company, Pittsfield,
Mass.
British Columbia Electric Railway Company,
Vancouver, B. C.
Brotherhood of R.R. Trainmen's Building, Cleve-
land, Ohio.

Burroughs Adding Machine Company, Detroit,
Mich.
Cincinnati Times Enquirer Building, Akron, Ohio.
Cleveland Plain Dealer Building, Cleveland, Ohio.
Cleveland Press, Cleveland, Ohio.
Commercial Trust Building, Philadelphia, Pa.
Continental Bank Building, Dayton, Ohio.
Cross & Blackwell Building, Toronto, Canada.
Crowell Publishing Company, Springfield, Ohio.
Employers Liability Assurance Company, Boston,
Mass.
Equitable Trust Co. Building, New York City.
Fayban Building, Boston, Mass.
First National Stores Incorporated, Somerville,
Mass.
Flint Journal, Flint, Mich.
G. Fox & Company, Hartford, Conn.
Gillette Safety Razor Company, Boston, Mass.
Goodyear Tire & Rubber Company, Akron, Ohio.
Grand Rapids Trust Building, Grand Rapids, Mich.
Hartford Connecticut Trust Company, Hartford,
Conn.
Hershey Chocolate Company, Hershey, Pa.
Hills Brothers, San Francisco, Cal.
Illuminating Building Cleveland, Ohio.
Insurance Co. of North America, Philadelphia, Pa.
Land Title & Trust Building, Philadelphia, Pa.
Land Security Building, Cleveland, Ohio.
Kearigishian & Textile Building, New York City.
Kelvinator Refrigerator Company, Detroit, Mich.
Kohler Company, Kohler, Mich.
Kresge Building, Indianapolis, Ind.
Liberty Title & Trust Company, Philadelphia, Pa.
Loblaw Groceries Ltd., Toronto, Canada.
Meyer-Kiser Bank Building, Indianapolis, Ind.
Milwaukee Paper Box Company, Milwaukee, Wis.
Narragansett Electric Lighting Company, Provi-
dence, R. I.
New York Life Insurance Co., New York City.
Parke-Davis Office Building, Detroit, Mich.
Pittsburgh Press, Pittsburgh, Pa.
Prudential Life Insurance Company, Newark, N. J.
Ralston-Purina Company, St. Louis, Mo.
Roanoke Tower Building, Chicago, Ill.
"Saturday Night" Publishing Co., Toronto, Can.
Standard Building, Hartford, Conn.
Standard Sanitary Manufacturing Co., Hartford,
Conn.
State Mutual Life Assurance Co., Worcester, Mass.
Stone & Webster Incorporated, Boston, Mass.
Third National Bank Building, Dayton, Ohio.
United Electric Light & Power Co., New York City.
Victor Talking Machine Company, Camden, N. J.
Wilson Building, Charlotte, N. C.
Yuster Building, Columbus, Ohio.

INDUSTRIAL

Aluminum Company of America.
American Engineering Company, Philadelphia, Pa.
American Rolling Mills, Middletown, Ohio.
American Steel & Wire Co., Worcester, Mass.
Aronson Silk Mills, Coatesville, Pa.
Atmospheric Nitrogen Company, Hopewell, Va.
Walter Bates Steel Company, Cleveland, Ohio.
Belden Wire Company, Richmond, Ind.
Bell & Howell Manufacturing Co., Chicago, Ill.
Bethlehem Ship Building Corp., Quincy, Mass.
Bethlehem Steel Corporation.
Buick Motor Company, Flint, Mich.
Cahokia Station of Union Electric Light & Power
Co., St. Louis, Mo. (Turbine Room).
Chevrolet Motor Company, Flint, Mich.
Chrysler Motor Company, Detroit, Mich.

PROMINENT USERS OF HOLOPHANE EQUIPMENT

Commonwealth Steel Company, Granite City, Ill.
 Conowingo Maryland, Turbine Room & Sub-Station.
 Dodge Brothers, Detroit, Mich.
 Doehler Dye Casting Company, Toledo, Ohio.
 Duplan Silk Corporation, Hazelton, Pa.
 E. I. Du Pont de Nemours & Company, (Dye, Powder and Acid Plants).
 Firestone Tire & Rubber Company, Akron, Ohio.
 Fisher Body Company, Cleveland, Ohio.
 Fisk Rubber Company, Chicopee Falls, Mass.
 Ford Motor Company, Dearborn, Mich. (Engineering Building and Steel Mill).
 General Electric Company, Schenectady, N. Y.
 Gillette Safety Razor Company, Boston, Mass.
 Goodyear Tire & Rubber Company, Akron, Ohio.
 Halcomb Steel Company, Syracuse, N. Y.
 Hood Rubber Company, Cambridge, Mass.
 Hudson Motor Company, Detroit, Mich.
 International Motor (Mack Truck) Company, Plainfield, N. J.
 Jones & Laughlin Steel Company, Pittsburgh, Pa.
 Kansas City Structural Steel Co., Kansas City, Mo.
 Merrimac Chemical Company, Charlestown, Mass.
 National Tube Company, Pittsburgh, Pa.
 Packard Motor Company, Detroit, Mich.
 Pa. R. R., Paoli Shops, Paoli, Pa.
 Pennsylvania Railroad, Philadelphia, Pa. (Yards).
 Philadelphia & Reading Railroad, Camden, N. J. (Terminal).
 John A. Roebling & Sons Company, Trenton, N. J.
 Royal Vacuum Cleaner Company, Cleveland, Ohio.
 Schraffts, Boston, Mass.
 Sharon Steel Hoop Company, Sharon, Pa.
 A. G. Spaulding & Bros., Chicopee, Mass.
 Standard Oil Company of California.
 Standard Steel Spring Company, Coraopolis, Pa.
 Studebaker Motor Co., South Bend, Ind. (Foundry).
 Textile Dyeing Co. of America, Paterson, N. J.
 Tower Manufacturing Company, Boston, Mass.
 Trumbell Steel Company, Warren, Ohio.
 United States Steel Plants, Pittsburgh, Pa.
 Victor Talking Machine Company, Camden, N. J.
 Wheeling Steel Company, Various Plants.
 York Manufacturing Company, York, Pa.
 Youngstown Sheet & Tube Co., Youngstown, Ohio.

SCHOOLS

Alameda High School, Oakland, Cal.
 Alexander Hamilton Jr. High School, Oakland, Cal.
 Alvernia High School, Chicago, Ill.
 Baldwin School, Bryn Mawr, Pa.
 Bristol High School, Bristol, Conn.
 Camden High School, Camden, N. J.
 Camden High School, Camden, N. Y.
 Carlisle St. School, New Haven, Conn.
 Continuation School, Milwaukee, Wisc.
 Convent Sisters of Precious Blood, Dayton, Ohio.
 Cook County Township Schools, Chicago, Ill.
 Crosby School, Waterbury, Conn.
 Dalhousie University, Halifax, N. S.
 De Pauw University, De Pauw, Ind.
 Detroit Public Schools.
 DuPont High School, Wilmington, Del.
 Fort Dodge High School, Fort Dodge, Iowa.
 Frank Wiggins Trade School, Los Angeles, Cal.
 Garfield School, Oakland, Cal.
 Georgia Institute of Technology, Atlanta, Ga.
 Grover Cleveland Junior High School, Zanesville, Ohio.
 Hartford High School, Hartford, Conn.
 Harvard University, Cambridge, Mass.
 High School, Syracuse, N. Y.
 Indian Orchard School, Springfield, Mass.
 Jefferson High School, Dayton, Ohio.
 Joliet High School, Joliet, Ill.
 Junior High School, Worcester, Mass.
 LaSalle High School, La Salle, Ill.

Lincoln High School, Dayton, Ohio.
 Lockport High School, Lockport, Ill.
 Marquette University, Milwaukee, Wisc.
 McGill University, Montreal, P. Q.
 McKinley High School, Dayton, Ohio.
 Mechanical Arts High School, Manchester, N. H.
 Mechanical Arts High School, Springfield, Mass.
 Milwaukee Continuation School, Milwaukee, Wisc.
 Milwaukee School of Engineering & Public Schools.
 Morengo High School, Morengo, Ill.
 North Dallas High School, Dallas, Texas.
 North Junior High School, New Bedford, Mass.
 Oakdale High School, Dayton, Ohio.
 Oak Park High School, Chicago, Ill.
 Ohio State University, Columbus, Ohio.
 Overbrook High School, Philadelphia, Pa.
 Pawtucket High School, Pawtucket, R. I.
 Philadelphia Public Schools.
 Public School, Buffalo, N. Y.
 Public Schools, Central Falls, R. I.
 Public Schools, Flint, Mich.
 Public Schools, Kalamazoo, Mich.
 Reading Public Schools, Reading, Pa.
 Roosevelt High School, Dayton, Ohio.
 Roscoe Conklin Grade School, Camden, N. Y.
 St. Anthony Convent School, Utica, N. Y.
 Salt Lake City Public Schools, Salt Lake City, Utah.
 San Francisco School of Fine Arts, San Francisco, Cal.
 St. Benedict's College, Newark, N. J.
 Shelton High School, Bristol, Conn.
 Shorewood High School, Milwaukee, Wisc.
 Smith College, Northampton, Mass.
 South Junior High School, New Bedford, Mass.
 South Portland High School, South Portland, Me.
 Technical High School, Springfield, Mass.
 Theodore Roosevelt Junior High School, Zanesville, Ohio.
 Thompson Institute, Yonkers, N. Y.
 University of Cincinnati, Ohio.
 Waterloo High School, Waterloo, Iowa.
 Waterside School, Stamford, Conn.
 Western Hills High School, Cincinnati, Ohio.
 Wilmette City Schools, Wilmette, Ill.
 Windsor & Walkerville Technical School, Windsor, Ont.
 Woodlawn High School, Birmingham, Ala.
 Woodward School, St. Louis, Mo.
 Yale University, New Haven, Conn.

HOSPITALS

Bethesda Hospital, Cincinnati, Ohio.
 Booth Memorial Hospital, Covington, Ky.
 City of Boston—Health Units Nos. 1, 2, 3, Boston, Mass.
 Boston City Hospital, Boston, Mass.
 Children's Hospital, Akron, Ohio.
 Children's Hospital Covington, Ky.
 Cleveland City Hospital, Cleveland, Ohio.
 Dr. Crile's Cleveland Clinic, Cleveland, Ohio.
 Crippled Children's Hospital, Cincinnati, Ohio.
 Deaconess Hospital, Cincinnati, Ohio.
 Free Hospital for Women, Brookline, Mass.
 Good Samaritan Hospital, Cincinnati, Ohio.
 Dr. Hanson's Clinic, Cleveland, Ohio.
 Harper Hospital, Detroit, Mich.
 John Hopkins Hospital, Baltimore, Md.
 King's Park Hospital, Staten Island, N. Y.
 Mercy Hospital, Hamilton, Ohio.
 Newark Industrial Clinic, Newark, N. J.
 Painesville City Hospital, Painesville, Ohio.
 Riley Memorial Hospital, Indianapolis, Ind.
 U. S. War Ships Operating Room.
 Vanderbilt Hospital, Nashville, Tenn.
 Wards Island Hospital, N. Y.
 Westfield State Sanatorium, Westfield, Mass.
 Women's Hospital, Detroit, Mich.
 Wyandotte Hospital, Wyandotte, Mich.

HOLOPHANE LIGHT DIRECTORS FOR MISCELLANEOUS APPLICATIONS

NOTE! Holophane Light Directors not shown elsewhere in this Datalog but sometimes included in Holophane Engineering Specifications are listed below for convenient reference.

Catalog No.	DESCRIPTION	List Price	Sched.	Std. Quant.
657	200 watt focusing industrial reflector	\$15.40	I	6
741	300-1500 watt total indirect unit	13.20	I	5
*C-CSE-75	Complete ceiling type fixture and reflector	4.20	R	10
*C-CSI-75	Complete ceiling type fixture and reflector	4.20	R	10
*C-CSE-100	Complete ceiling type fixture and reflector	4.55	R	10
*C-CSI-100	Complete ceiling type fixture and reflector	4.55	R	10
*CXE-25	Complete ceiling type fixture and reflector	3.70	R	20
*CXF-25	Complete ceiling type fixture and reflector	3.70	R	20
*CXI-25	Complete ceiling type fixture and reflector	3.70	R	20
*CXE-40	Complete ceiling type fixture and reflector	3.85	R	10
*CXF-40	Complete ceiling type fixture and reflector	3.85	R	10
*CXI-40	Complete ceiling type fixture and reflector	3.85	R	10
*CXE-60	Complete ceiling type fixture and reflector	3.95	R	10
*CXF-60	Complete ceiling type fixture and reflector	3.95	R	10
*CXI-60	Complete ceiling type fixture and reflector	3.95	R	10
*B-CSE-75	Complete bracket fixture and reflector	4.40	R	10
*B-CSI-75	Complete bracket fixture and reflector	4.40	R	10
*B-CSE-100	Complete bracket fixture and reflector	4.75	R	10
*B-CSI-100	Complete bracket fixture and reflector	4.75	R	10
*BXE-25	Complete bracket fixture and reflector	3.90	R	20
*BXF-25	Complete bracket fixture and reflector	3.90	R	20
*BXI-25	Complete bracket fixture and reflector	3.90	R	20
*BXE-40	Complete bracket fixture and reflector	4.05	R	10
*BXF-40	Complete bracket fixture and reflector	4.05	R	10
*BXI-40	Complete bracket fixture and reflector	4.05	R	10
*BXE-60	Complete bracket fixture and reflector	4.15	R	10
*BXF-60	Complete bracket fixture and reflector	4.15	R	10
*BXI-60	Complete bracket fixture and reflector	4.15	R	10
B-2110	Complete bracket fixture and reflector	6.00	R	12
B-2120	Complete bracket fixture and reflector	8.00	R	8
B-2170	Complete bracket fixture and reflector	8.25	R	8
T-5	5 Light Industrial Trough Unit	46.20	I	5
*B-333	Asymmetric cap and spring holder for cove lighting	1.10	I	20

*Add 10% to list price for Velvet Finish.

HOLOPHANE INDEX

Holophane No.	List Price Each	Sched.	Std. Quant.	Page	Holophane No.	List Price Each	Sched.	Std. Quant.	Page
*B-333	\$1.10	I	20	44	691-AL	\$27.50	I	5	23
B-2110	6.00	R	12	44	691-AL-W	40.00	I	5	23
B-2120	8.00	R	8	44	729-VF†	2.40	I	50	38-39
B-2170	8.25	R	8	44	741	13.20	I	5	44
*B-CSE-75	4.40	R	10	44	745-VF†	1.80	I	100	38-39
*B-CSI-75	4.40	R	10	44	752-VF†	3.60	I	25	38-39
*B-CSE-100	4.75	R	10	44	755-VF†	3.60	I	25	38-39
*B-CSI-100	4.75	R	10	44	756-VF†	3.60	I	24	38-39
*BXE-25	3.90	R	20	44	756-4 †	14.40	I	6	38-39
*BXF-25	3.90	R	20	44	789-VF†	1.80	I	100	38-39
*BXI-25	3.90	R	20	44	790-VF†	3.60	I	50	38-39
*BXE-40	4.05	R	10	44	791-VF†	1.80	I	100	38-39
*BXF-40	4.05	R	10	44	729-F	1.50	I	50	39
*BXI-40	4.05	R	10	44	745-F	1.35	I	100	39
*BXE-60	4.15	R	10	44	752-F	1.80	I	25	39
*BXF-60	4.15	R	10	44	755-F	1.80	I	25	39
*BXI-60	4.15	R	10	44	789-F	1.35	I	100	39
*C-CSE-75	4.20	R	10	44	790-F	1.35	I	50	39
*C-CSI-75	4.20	R	10	44	830	8.00	R	20	28
*C-CSE-100	4.55	R	10	44	831	7.00	R	20	28
*C-CSI-100	4.55	R	10	44	832	10.50	R	10	28
*CSE-75	1.40	R	10	35	922	4.50	R	10	15-17
*CSI-75	1.40	R	10	35	922-B	5.80	R	10	16-17
*CSE-100	1.75	R	10	35	922-F	1.60	R	10	17
*CSI-100	1.75	R	10	35	944	7.00	R	8	15-17
*CSE-200	3.40	R	10	35	944-B	5.80	R	8	16-17
*CSI-200	3.40	R	10	35	944-F	1.60	R	8	17
*CXE-25	3.70	R	20	44	963	3.00	R	12	16-17
*CXF-25	3.70	R	20	44	963-B	5.80	R	12	17
*CXI-25	3.70	R	20	44	963-F	1.60	R	12	17
*CXE-40	3.85	R	10	44	981	2.00	R	30	16-17
*CXF-40	3.85	R	10	44	981-F	1.60	R	30	17
*CXI-40	3.85	R	10	44	983	3.00	R	12	16-17
*CXE-60	3.95	R	10	44	983-B	5.80	R	12	17
*CXF-60	3.95	R	10	44	983-F	1.60	R	12	17
*CXI-60	3.95	R	10	44	1011	2.25	R	10	33
*XE-25 . . . . .	.90	R	20	35	C-1011	16.25	R	5	33
*XF-25 . . . . .	.90	R	20	35	1211	4.15	R	3	33
*XI-25 . . . . .	.90	R	20	35	C-1211	21.65	R	3	33
*XE-40	1.05	R	10	35	1245	7.90	R	8	29
*XF-40	1.05	R	10	35	1411	8.75	R	3	33
*XI-40	1.05	R	10	35	C-1411	35.00	R	3	33
*XE-60	1.15	R	10	35	2110	3.00	R	12	18-19
*XF-60	1.15	R	10	35	C-2110	5.80	R	12	18-19
*XI-60	1.15	R	10	35	S-2110	7.80	R	12	18-19
622	8.25	I	5	22	2120	4.50	R	8	18-19
622-AL	12.10	I	5	22	C-2120	7.50	R	8	18-19
652	10.45	I	5	22	S-2120	9.50	R	8	18-19
652-AL	14.30	I	5	22	2130	10.50	R	4	18-19
653	2.30	I	10	24-25	C-2130	14.00	R	4	18-19
653-AL	5.60	I	10	25	S-2130	16.00	R	4	18-19
654	3.20	I	10	24-25	2133	10.50	R	4	18-19
654-AL	6.50	I	10	25	C-2133	14.00	R	4	18-19
657	15.40	I	6	44	S-2133	16.00	R	4	18-19
671	8.25	I	5	24-25	2140	15.00	R	3	18-19
671-AL	12.10	I	5	25	C-2140	20.00	R	3	18-19
681-AL	14.30	I	5	23	S-2140	22.00	R	3	18-19

*Add 10% to list price if velvet finish is to be furnished.
† Deduct 10% from list price if clear glass is to be furnished.

HOLOPHANE INDEX

Holophane No.	List Price Each	Sched.	Std. Quant.	Page	Holophane No.	List Price Each	Sched.	Std. Quant.	Page
2140-6"	\$15.00	R	3	18-19	6583	\$ 7.70	I	10	24-25
C-2140-6"	20.00	R	3	18-19	6583-AL	11.00	I	10	25
S-2140-6"	22.00	R	3	18-19	6588	3.85	I	10	25
2143	15.00	R	3	18-19	6588-AL	7.15	I	10	25
C-2143	20.00	R	3	18-19	6671	5.50	I	5	25
S-2143	22.00	R	3	18-19	6671-AL	9.35	I	5	25
2143-6"	15.00	R	3	18-19	6681-AL	10.45	I	5	23
C-2143-6"	20.00	R	3	18-19	6691-AL	18.00	I	5	23
S-2143-6"	22.00	R	3	18-19	7322	9.00	R	5	20-21
2170	4.50	R	8	18-19	7326	9.00	R	1	36
C-2170	8.00	R	8	18-19	C-7326	17.50	R	1	36
S-2170	10.00	R	8	18-19	S-7326	20.00	R	1	36
2172	4.50	R	8	32	7344	13.00	R	4	20-21
C-2172	8.00	R	8	32	7346	13.00	R	1	36
2176	4.25	R	8	32	C-7346	24.00	R	1	36
2180	10.50	R	4	18-19	S-7346	28.00	R	1	36
C-2180	14.50	R	4	18-19	7388	25.00	R	1	20-21
S-2180	16.50	R	4	18-19	8420	2.25	R	10	33
2203 Amber	4.40	I	20	34	C-8420	16.25	R	10	33
2203 Crystal	2.75	I	20	34	8422	4.15	R	10	33
2203 Green	3.85	I	20	34	C-8422	21.65	R	10	33
2203 Ruby	4.40	I	20	34	8424	8.75	R	3	33
**2208	2.20	I	20	30	C-8424	35.00	R	3	33
**2323 Amber	6.00	I	8	34	0228	4.95	I	20	34
2323 Crystal	3.85	I	8	34	0229	5.50	I	8	34
2323 Green	5.50	I	8	34	0231	4.95	I	20	30
2323 Ruby	6.00	I	8	34	0232	7.15	I	15	30
**2328	3.30	I	15	30	0233	8.80	I	6	30
**2338	6.60	I	6	30	0234	5.50	I	8	31
**2370	3.85	I	8	31	0310	14.00	R	10	33
**2372	3.85	I	8	31	0312	17.50	R	10	33
**2376	3.30	I	8	31	0314	26.25	R	3	33
4333	14.00	R	8	26-27	0362	2.75	I	8	31
4334	5.00	R	10	28	0363	1.50	I	8	31
4337	3.50	R	20	28	0366	2.25	R	8	32
4338	7.50	R	8	26-27	0371	4.80	R	12	19
				-29	0372	5.00	R	8	19
4376	8.50	R	8	26-27	0373	5.50	R	8	19
				-29	0374	7.00	R	3	19
4377	9.25	R	8	26-27	0375	7.00	R	3	19
				-29	0378	6.00	R	4	19
6522	5.50	I	5	22	0380	5.00	R	5	21
6522-AL	9.35	I	5	22	0381	6.00	R	4	21
6531	4.35	I	10	24-25	0382	7.00	R	3	21
6531-AL	7.65	I	10	25	0383	55.00	R	1	21
6533	4.35	I	10	24-25	0384	11.00	R	1	36
6533-AL	7.65	I	10	25	0385	15.00	R	1	36
6541	5.25	I	10	24-25	0391	2.80	R	12	19
6541-AL	8.55	I	10	25	0392	3.00	R	8	19
6543	5.25	I	10	24-25	0393	3.50	R	8	19-32
6543-AL	8.55	I	10	25	0394	5.00	R	3	19
6552	6.60	I	5	22	0395	5.00	R	3	19
6552-AL	10.45	I	5	22	0398	4.00	R	4	19
6573	1.30	I	10	25	0400	3.50	R	5	21
6573-AL	4.60	I	10	25	0401	5.00	R	4	21
6575	2.20	I	10	25	0402	6.00	R	3	21
6575-AL	5.50	I	10	25	0403	8.50	R	1	36

** Add \$3.30 list additional for aluminum covers spun on permanently.

HOLOPHANE INDEX

Holophane No.	List Price Each	Sched.	Std. Quant.	Page	Holophane No.	List Price Each	Sched.	Std. Quant.	Page
0404	\$11.00	R	1	36	04338	\$24.80	R	4	26-27
0641	3.05	I	10	25	04376	25.80	R	4	26-27
0643	3.05	I	10	25	04377	26.55	R	4	26-27
0644	3.85	I	10	25	043382	39.90	R	4	29
0662	2.75	I	5	22	043762	40.90	R	4	29
0665	3.85	I	5	22	043772	41.65	R	4	29
0672	2.75	I	5	25	18102	1.50	R	20	40
0673	3.85	I	5	23	18134	1.05	R	40	40
0674	9.50	I	5	23	18136	1.15	R	30	40
0875	5.80	R	10	28	18221	1.00	R	30	40
0878	12.60	R	8	26-27	18226	2.60	R	20	40
				-29	18246	4.45	R	8	40
0881	17.30	R	8	27	CF-100 Filterlite	12.50	R	5	20-21
0882	19.00	R	8	27	F-100 "	14.00	R	5	20-21
0883	24.50	R	8	29	CF-200 "	18.00	R	4	20-21
0890	5.50	R	10	28	F-200 "	19.00	R	4	20-21
0891	4.50	R	20	28	CF-300 "	19.00	R	3	20-21
0892	3.50	R	20	28	F-300 "	20.00	R	3	20-21
0936	1.00	R	10	25	F-500 "	80.00	R	1	20-21
02176	6.50	R	8	32	No. 15 M.C.L.S.	935.00	I	1	37
02203 Amber	9.35	I	20	34	No. 18 M.C.L.S.	990.00	I	1	37
02203 Crystal	7.70	I	20	34	No. 21 M.C.L.S.	1155.00	I	1	37
02203 Green	8.80	I	20	34	T-5	46.20	I	5	44
02203 Ruby	9.35	I	20	34					
**02208	7.15	I	20	30	MISCELLANEOUS				
02323 Amber	11.50	I	8	34	Filterlite Chain (ft.)	\$.40	R		
02323 Crystal	9.35	I	8	34	R-r Chain (ft.) . . . . .	.40	R		
02323 Green	11.00	I	8	34	Appleton No. 7319 . . . . .	.60	R	50	41
02323 Ruby	11.50	I	8	34	H. D. H.	1.25	I	30	41
**02328	10.45	I	15	30	Uno No. 502 . . . . .	.25	R	50	41
**02338	15.40	I	6	30	Uno No. 504 . . . . .	.35	R	50	41
**02370	9.35	I	8	31	Uno No. 506 . . . . .	.50	R	50	41
**02370-BC	5.35	I	8	31	3 1/4" Form A . . . . .	.75	R	30	41
**02370-S	6.60	I	8	31	Bryant 443 . . . . .	.60	R	50	41
**02372	9.35	I	8	31	Bryant 444 . . . . .	.60	R	50	41
**02372-BC	5.35	I	8	31	622 Wire Guard	3.30	I	5	41
**02372-S	6.60	I	8	31	671-671AL-681AL-652				
**02376	8.80	I	8	31	Wire Guard	3.85	I	5	41
**02376-BC	4.80	I	8	31	691-AL Wire Guard	4.40	I	5	41
**02376-S	6.05	I	8	31	P&S 1192 1/4 O Holder30	R	50	41
04333	33.00	R	4	26-27					

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Notes:

Booklets

- Bulletin No. 250 —Scientific Street Lighting.
350 —Streets That Are Safe.
344-A—The Lighting of Schools.
375-F—Holophane Datalog.
444-A—Modern Retailing Success.
448-A—Industrial Lighting.
500 —The Lighting of Modern Office Buildings.
600 —Lighting Specifics for Gasoline Stations.

Folders

- Form No. 401—Light for Industrial Efficiency.
447—Successful Retailing.
464—Profitable Store Lighting.
465—Successful Office Lighting.
466—Holophane Gloria Lamps.
470—Hospital Lighting Specifics.
475—Wide Spread Light.

Special Engineering Folios

- Folio No. 1—Lighting Specific for High Bays.
2—Lighting Specific for Gasoline Filling Stations.
3—Lighting Specific for Outdoor Substations.
4—Lighting Specific for Industrial Yards.
5—Lighting Specific for Silk Mills.
6—Lighting Specific for Air Fields.
7—Lighting Specific for Hospitals.

Films

The following films for use with the Bray and other projectors can be furnished on request at a nominal charge:

- Film No. 1161—Holophane Industrial Lighting.
1263—Holophane Scientific Illumination.
1308—Productive Lighting in Industry.
1329—Scientific Street Lighting.
W-78—Modern Retailing Success.

